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RUN-OFF INVESTIGATIONS IN CENTRAL ILLINOIS

A REPORT OF AN INVESTIGATION

CONDUCTED BY

THE ENGINEERING EXPERIMENT STATION
UNIVERSITY OF ILLINOIS

IN COÖPERATION WITH

THE BUREAU OF PUBLIC ROADS
UNITED STATES DEPARTMENT OF AGRICULTURE

BY

GEORGE W. PICKELS

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ENGINEERING EXPERIMENT STATION
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THE ENGINEERING EXPERIMENT STATION,
UNIVERSITY OF ILLINOIS,
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UNIVERSITY OF ILLINOIS
ENGINEERING EXPERIMENT STATION

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PROFESSOR OF CIVIL ENGINEERING

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RUN-OFF INVESTIGATIONS IN CENTRAL ILLINOIS

I. Introduction

1. *Preliminary Statement.*—The land-drainage problem in Illinois is an important one, especially so in the central part of the State where the topography is so flat and the natural drainage so inadequate that successful agriculture cannot be accomplished without artificial drainage.

An investigation of the drainage situation in Illinois, made by the State Geological Survey* in 1928, disclosed the following facts: (1) 5 124 088 acres of land were embraced in organized drainage districts, many of which were operating unsuccessfully because of inadequate outlet capacity; (2) 1 255 610 acres of very fertile bottom lands were in need of flood protection and drainage; (3) 186 615 acres were being organized into drainage districts; (4) 385 580 acres of upland, which were not within districts, were greatly in need of drainage; (5) a large aggregate area of lands, scattered throughout the State, would be greatly benefited by drainage; and (6) during the period from 1920 to 1928, 334 778 acres were organized in drainage districts at an approximate cost of $8 000 000—a remarkable development when the farmers' trying economic condition is considered. These facts emphasize the importance of land drainage in the State.

In the design of open drainage channels there are two assumptions which the engineer must make: (1) the maximum rate of discharge which the ditch system must carry, and (2) the resistance to flow offered by the channels when their side slopes become covered with grasses, weeds, bushes, and trees. Experimental data upon these factors are very limited and the engineer has had little upon which to base his assumptions; hence, the information contained in this bulletin should prove of value.

The annual yields of small watersheds is a matter which is becoming increasingly important, since many communities which are now using wells are considering reservoirs as a source of water supply. The watershed yields measured during this investigation, although limited as to time, should prove of benefit to those interested in surface water-supply problems.

2. *Purpose of Investigation.*—The purpose of this investigation was three-fold:

*Bulletin No. 42, Engineering and Legal Aspects of Land Drainage in Illinois, by G. W. Pickels and F. B. Leonard.

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(1) To determine the roughness factor n in Kutter's formula for flow of water in open drainage channels in Central Illinois.

(2) To determine the maximum discharge for which drainage channels in Central Illinois should be designed, so far as the limited period of the investigation permitted.

(3) To determine the annual yields of small watersheds, such as are found in Central Illinois, so far as the limited period of the investigation permitted.

3. *Acknowledgments.*—This investigation is the result of a coöperative agreement between the Engineering Experiment Station of the University of Illinois and the Bureau of Public Roads, United States Department of Agriculture. On the part of the University of Illinois, the work has been under the administrative direction of Dean M. S. Ketchum, Director of the Engineering Experiment Station, and Prof. W. C. Huntington, Head of the Department of Civil Engineering. On the part of the Bureau of Public Roads, the work has been under the administrative direction of Thomas H. MacDonald, Chief of the Bureau of Public Roads, and S. H. McCrory, Chief of the Division of Agricultural Engineering.

The investigation was planned and supervised by the author on behalf of the Engineering Experiment Station and by C. E. Ramser, Senior Drainage Engineer, on behalf of the Bureau of Public Roads. From the beginning of the investigation in February, 1924, to July 1, 1924, H. J. Bartz, Junior Drainage Engineer, carried on the field work with some assistance from the author. From July 1, 1924, to the end of the investigation in October, 1927, Robert A. Norton, Assistant Drainage Engineer, Bureau of Public Roads, was in direct charge of all the field work and office computations. All the computations for values of n in this bulletin were made by Mr. Norton and checked by R. L. Moore, at that time a student at the University. The computations in connection with the rainfall studies were made by the author, and the run-off computations by K. C. Tippy, a graduate student in the Department of Civil Engineering.

II. Description of Watersheds*

4. *Names and Locations of Watersheds.*—The general location of the area covered by this investigation, with respect to the State as a whole, is shown in Fig. 1, which also shows the major drainage systems of the State. It will be observed that the area considered is at

*The word watershed is used throughout the bulletin to denote a drainage basin.

FIG. 1. MAP OF ILLINOIS, SHOWING LOCATION OF AREA STUDIED IN THIS INVESTIGATION

the headwaters of a number of streams, the Sangamon River on the west, the Vermilion River on the north, the Big Vermilion River on the east, and the Embarrass and Kaskaskia rivers on the south.

Figure 2 shows the same area enlarged sufficiently to show the boundaries of the seven watersheds comprising the area. For the purpose of reference the watersheds are numbered. The names corresponding to the numbers are as follows:

No. 1—West Branch of Salt Fork.

No. 2—Fountain Head Drainage District, in part.

TABLE 1
WATERSHED DATA

Reference Number	Area sq. mi.	Length mi.	Maximum width mi.	Average width mi.	Ratio Length to Width
1	60.5	11.2	8.0	5.4	2.1
2	4.7	3.6	1.8	1.3	2.8
3	12.0	5.1	3.7	2.4	2.1
4	15.3	7.3	3.0	2.1	3.5
5	11.5	6.7	2.7	1.7	3.9
6	63.2	15.5	7.3	4.1	3.8
7	27.2	7.5	5.0	3.6	2.1

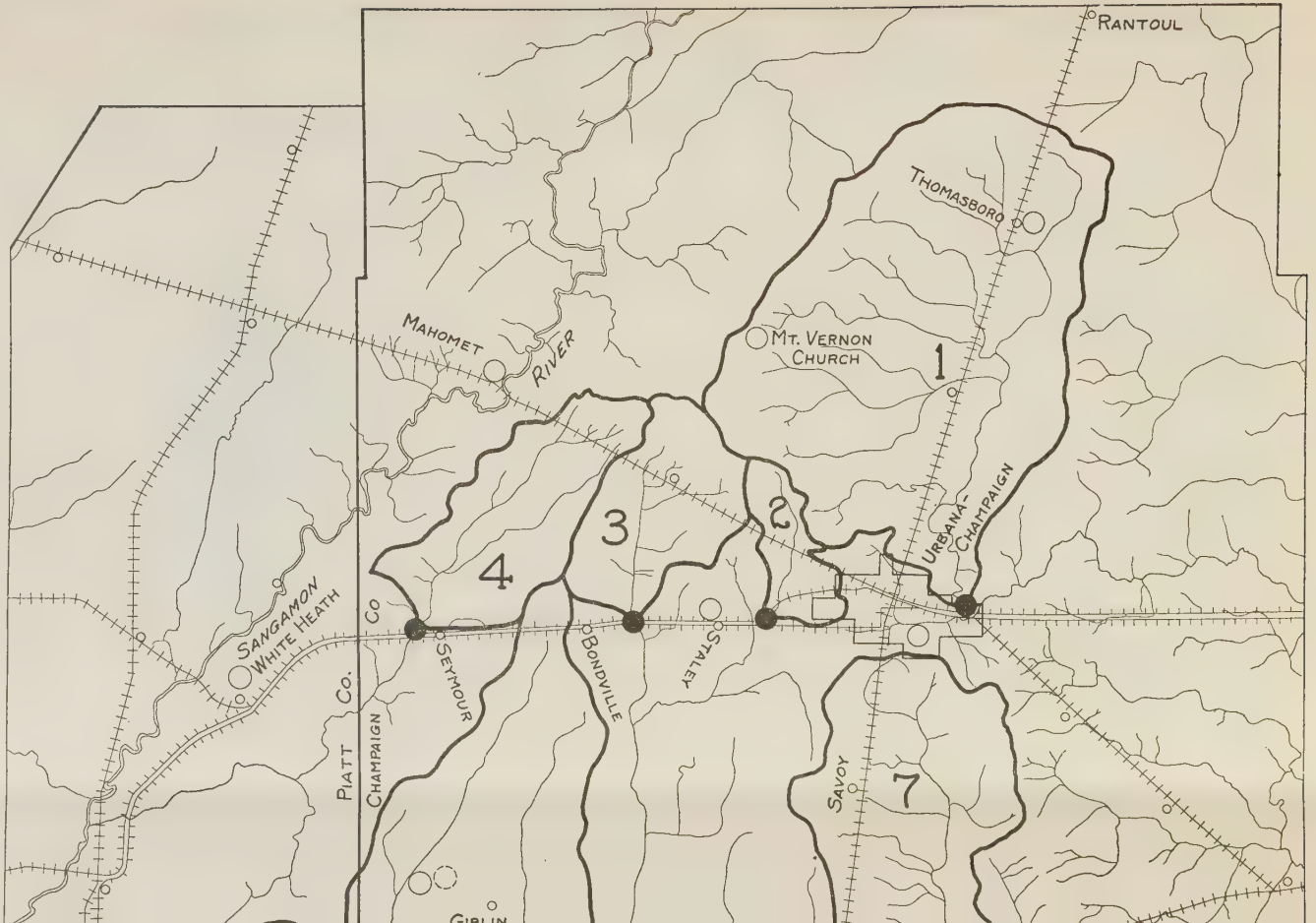
No. 3—Kaskaskia Mutual Drainage District, in part.
No. 4—Camp Creek Drainage District, in part.
No. 5—Lateral No. 15 of Lake Fork Special Drainage District, in part.
No. 6—Lake Fork Special Drainage District, in part.
No. 7—Embarrass River, east of Tolono.

5. *Size and Shape of Watersheds.*—The relative sizes and the shapes of the watersheds are shown in Fig. 2. More specific data are given in Table 1.

6. *Topography of Watersheds.*—Figures 3, 4, 5, and 6 show the topography of the several watersheds with the exception of No. 5. The data were obtained from the quadrangle maps of the United States Geological Survey. Unfortunately, the lower half of watershed No. 6 and watershed No. 5 have not been surveyed and mapped. The contours covering the lower half of watershed No. 6, shown in broken lines, were sketched in the field with the drainage lines (known) and a profile of the Wabash Railroad, which traverses the southern portion of the watershed, as a basis, and consequently are only approximately correct. The topography of watershed No. 5 is very similar to that of the southern portion of watershed No. 6, adjoining.

7. *Soil Types.*—Soil Report No. 18 of the Agricultural Experiment Station, University of Illinois, classifies the soil types in Champaign County as follows: brown silt loam, 72.86 per cent; black clay loam, 17.86 per cent; yellow-gray silt loam, 4.57 per cent; mixed loam, 2.37 per cent; and the remaining 2.34 per cent divided among ten other types. The descriptions of these soil types given below are abstracted from Soil Report No. 18.

The brown silt loam type occupies the slightly undulating to rolling areas of the prairie land. The surface soil, 0 to 6⅔ in., contains


RANTOUL
THOMASBORO
MT. VERNON CHURCH
MAHOMET RIVER
1
2
3
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7
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PIATT CO.
CHAMPAIGN CO
SEYMOUR
BONDVILLE
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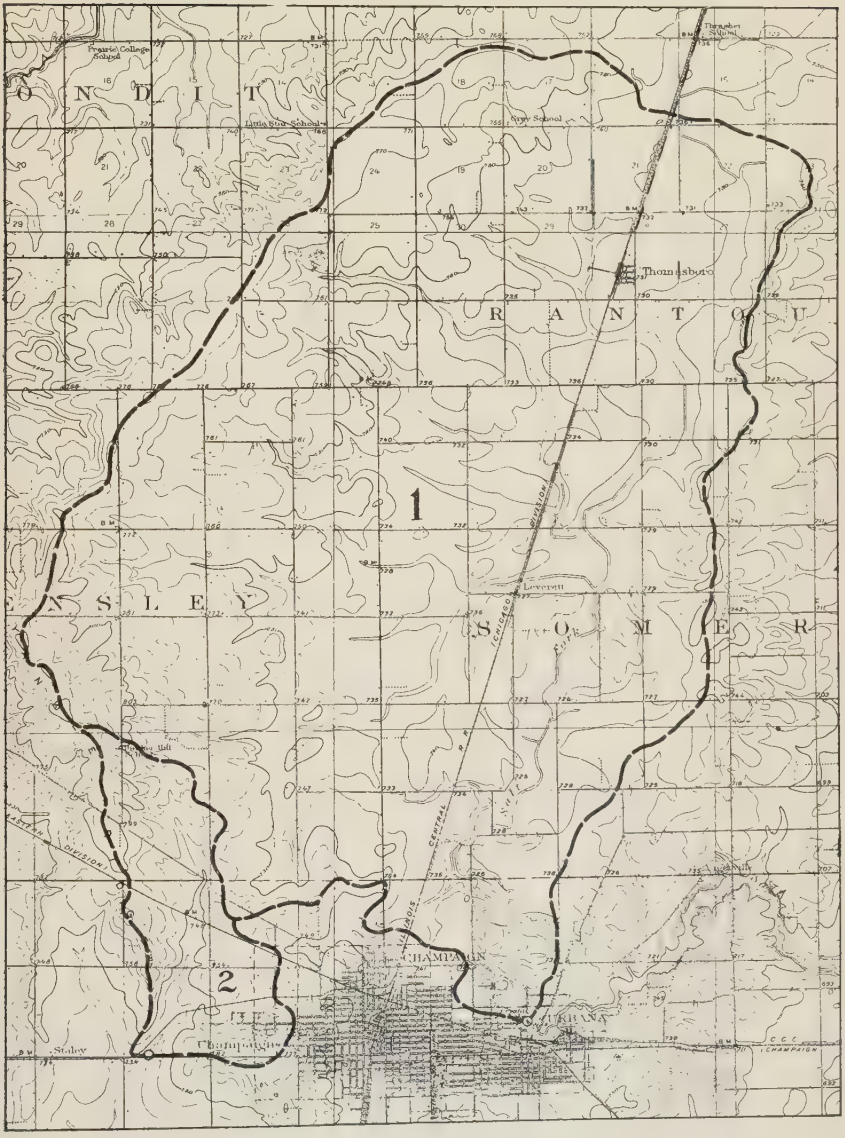

FIG. 3. TOPOGRAPHIC MAP OF WATERSHEDS NOS. 1 AND 2

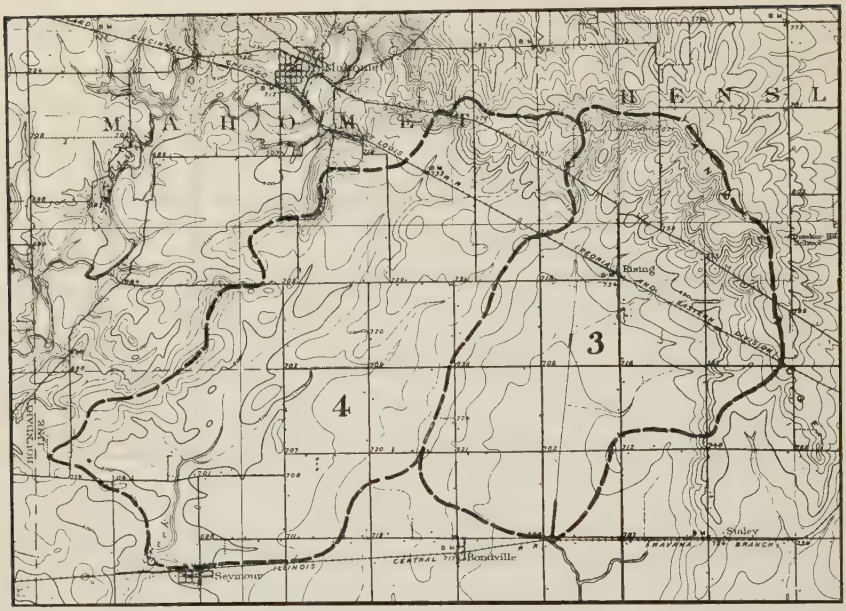

FIG. 4. TOPOGRAPHIC MAP OF WATERSHEDS NOS. 3 AND 4

normally from 65 to 80 per cent of silt, from 15 to 25 per cent of sand, from 10 to 15 per cent of clay, and from 4 to 6 per cent of organic matter. The subsurface soil, varying in thickness from 6 to 16 inches, has much the same physical composition as the surface soil, except that it contains somewhat more clay and less organic matter. The subsoil consists of a clayey silt or a silty clay, plastic when wet. Each of the three strata is pervious to water, and percolation takes place freely.

The black clay loam, sometimes called "gumbo," is found on the flat prairie areas which lack natural drainage. This type is found more or less concentrated along the streams and natural drainage lines and in small depressions elsewhere. There is scarcely a section of land in the county which does not contain some soil of this type. It is due to the accumulation of organic matter in the depressions and to the washing in of clay and fine silt from the adjoining higher lands. The surface soil is a black, plastic, granular, clay loam, containing on the average 6.3 per cent of organic matter. The subsurface soil is from 10 to 16 inches in thickness, and varies from a black to a brownish gray clay loam, generally slightly heavier than the surface soil. The average organic matter content is 2.8 per cent. The subsoil varies

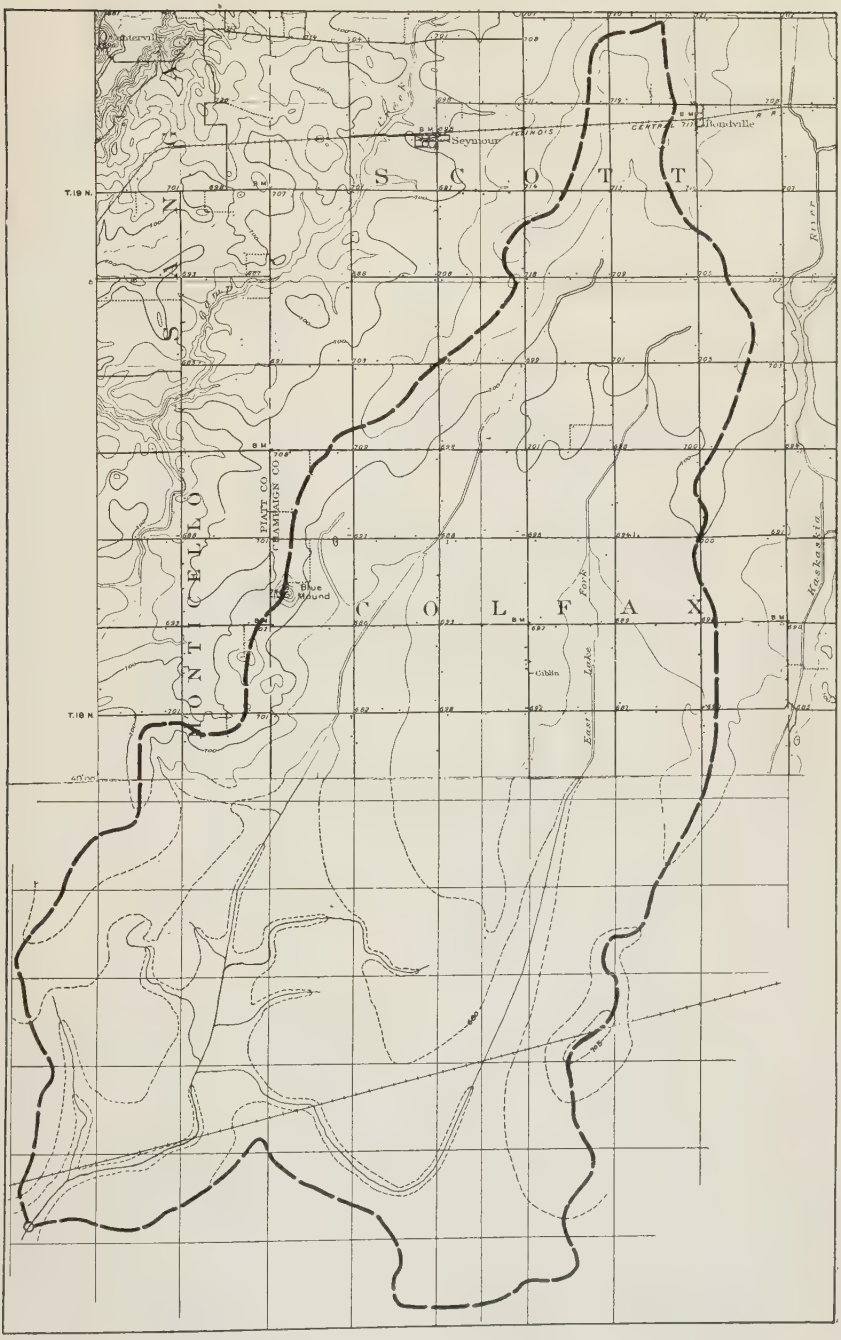

Fig. 5. Topographic Map of Watershed No. 6

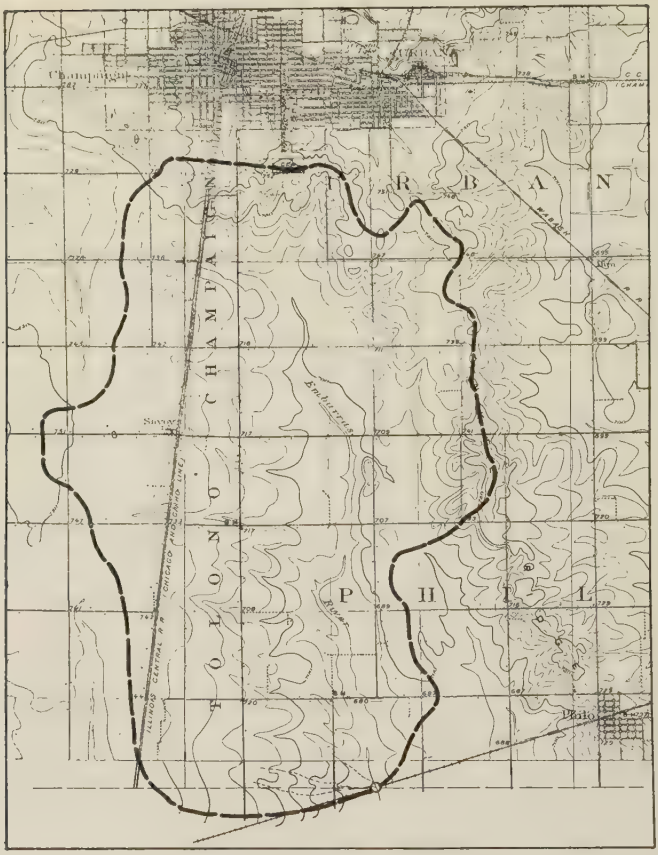

FIG. 6. TOPOGRAPHIC MAP OF WATERSHED NO. 7

from a drab to a yellowish drab silty clay. Black clay loam soil is an indication of inadequate natural drainage, and it has been to provide outlets for these areas that seventy drainage districts have been organized in Champaign County.

The yellow gray silt loam is an upland timber soil and occurs in the outer timber belts along the streams. Its topography is sufficiently rolling to provide satisfactory surface drainage. This type differs from the brown silt loam principally in that its organic matter content is only about 2.2 per cent.

The mixed loam is a bottom-land soil and is found along all the larger streams. It is a mixture of silt loam and sandy loam, with brown

TABLE 2
PERCENTAGES OF SOIL TYPES

Watershed No.	Soil Types			
	Brown Silt Loam	Black Clay Loam	Yellow Gray Silt Loam	Mixed Loam
	per cent			
1	70	22	7	1
2	93	7	0	0
3	80	20	0	0
4	80	20	0	0
5	45	55	0	0
6	75	25	0	0
7	85	14	0	1

silt loam predominating. It contains an average of 5.3 per cent organic matter.

The approximate percentages of each of these types of soil for each watershed are given in Table 2.

Since the black clay loam type of soil is a result of the topography, it is natural that there should be a close relation between the topography and the type of soil. Thus watersheds Nos. 2 and 7 with 7 and 14 per cent, respectively, of black clay loam have the steepest surface slopes, and watersheds Nos. 5 and 6 with 55 and 25 per cent of black clay loam, respectively, are very flat.

8. *Culture.*—Practically all of the area in the watersheds investigated is under cultivation. The crops raised are corn, wheat, oats, and soybeans. Only a small portion is in grass, and the only wooded areas are small scattered wood lots. Although watershed No. 1 contains about 7 per cent of timber soil, most of the timber has been cut. Along most of the channels there is a growth of small trees. This factor is considered subsequently.

9. *Drainage.*—The topographic maps show the natural and artificial drainage channels. In addition a large number of large tile drains have been constructed on most of the watersheds. The areas in watersheds Nos. 1 to 6 are in drainage districts and large tile drains have been laid at the upper end of each district above the open ditches. Also many large tile drains discharge into the ditches at intervals throughout their length. Watershed No. 7 is the only one in which no organized drainage has been done, but even here a considerable amount of tile under-drainage has been done by individual landowners.

III. Rainfall Measurements

10. *Location of Rainfall* Stations.*—As shown in Fig. 2, rain gages were located at Thomasboro, Mt. Vernon Church, Mahomet, White Heath, Bement, Giblin, Staley, and Sadorus. In addition to these eight stations, the records of the U. S. Weather Bureau station at Urbana were available.

11. *Rain Gages.*—In March, 1924, standard U. S. Weather Bureau rain gages were installed at these stations and read daily until the end of the investigation on Oct. 1, 1927. The gage at Urbana is an automatic tipping bucket gage which gives a continuous record, except during the winter months, when its use is discontinued on account of freezing temperatures, and the record consists of two daily readings of a standard gage. In June, 1926, the standard gage at Staley was replaced by a Ferguson recording rain and snow gage which can be operated throughout the year. The Urbana and Staley stations were the only ones which gave the rainfall intensities.

Special care was used in choosing suitable sites for the gages, so that there would be no disturbing factors to affect the accuracy of the gage.

12. *Observers and Records.*—The standard gages were read by paid observers. In choosing the observers, the essential characteristics sought were reliability and accuracy, and on the whole their work was very satisfactory.

The gages were read daily at 6 p.m., and in most cases the times of beginning and ending of the storm were recorded. Records were kept in a field note-book furnished the observer, and, in addition, a specially prepared data card, covering a week's record, was mailed to headquarters at Urbana at the end of each week.

IV. Water-Stage Measurements

13. *Location of Gaging Stations.*—The general locations of the gaging stations are shown in Fig. 2. More specific locations are given below.

Watershed No. 1.—Street bridge on North Broadway, Urbana.

Watershed No. 2.—Highway bridge on state route No. 10, about one mile east of Staley.

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*The word rainfall is used to denote all forms of precipitation.

Watershed No. 3.—Illinois Traction System bridge about one mile east of Bondville.

Watershed No. 4.—Private farm bridge about ¼ mile northeast of point where Camp Creek crosses state route No. 10, about ¾ mile west of Seymour.

Watershed No. 5.—Highway bridge about 1¾ miles east of Bement.

Watershed No. 6.—Private farm bridge about ¼ mile north of the east and west highway through Bement, and about 3¼ miles east of Bement.

Watershed No. 7.—Wabash Railroad bridge about 2½ miles east of Tolono.

14. *Gages.*—Staff gages were installed at each of the gaging stations for the purpose of obtaining the stages of the several streams. They were made of 2x4-in. cypress lumber, painted white and graduated to tenths of a foot. The foot divisions were numbered with metal figures such as are used for house numbers. The tenths were marked with brass-headed upholsterer's tacks of sufficient size to be read easily from the opposite side of the channel. The gages were firmly bolted to the bridge abutments.

In addition to the staff gages, recording water-level gages were installed for watersheds Nos. 2, 3, 4, 5, and 6. Two of these gages were manufactured by the Bristol Company, two by the Sanborn Company, and one by the Gurley Company. The first four mentioned were pressure gages, and the last one was a float-type gage. On watersheds Nos. 1 and 7 the staff gages were read twice daily by paid observers, at 6 a.m. and 6 p.m., during normal periods of flow, and during flood flows several extra readings were taken daily. The observers noted also the high water elevations, when the crests were reached between other readings.

V. Stream-Discharge Measurements

15. *Description of Method.*—Discharge measurements were made for each stream at various times during the period of the investigation and at various stages of the streams. Table 3 gives for each watershed the dates upon which measurements were made, the average stage of the stream during each measurment, and information as to whether the stream was rising or falling at the time of measurement.

Table 3
Dates and Stages of Discharge Measurements

Watershed No. 1		Watershed No. 2		Watershed No. 3		Watershed No. 4		Watershed No. 5		Watershed No. 6		Watershed No. 7	
Gage Height ft.	Date	Gage Height ft.	Date	Gage Height ft.	Date	Gage Height ft.	Date	Gage Height ft.	Date	Gage Height ft.	Date	Gage Height ft.	Date
0.92 s	4-10-24	1.09 f	8-19-24	1.47 f	8- 9-24	2.42 s	7-30-24	0.59 s	5- 5-24	0.20 s	8- 8-24	1.22 s	5-24-24
1.68 s	5- 1-24	1.15 s	8- 8-24	1.60 s	4- 4-24	3.07 s	4-10-24	1.38 f	3-26-25	2.20 f	11-10-25	3.15 s	4-10-26
1.92 f	6-17-25	1.22 s	4- 4-24	1.83 r	2- 7-25	3.40 s	3-20-26	2.00 s	6-19-26	2.84 r	3-20-26	3.85 f	8-25-24
2.06 f	4-26-24	1.47 s	3-13-25	1.85 s	11- 9-25	3.56 r	5- 6-24	1.96 f	6- 7-24	3.67 s	3-26-25	4.70 f	10- 4-26
2.18 f	9-14-25	1.56 s	5- 1-24	2.14 f	4-26-24	3.60 s	11- 9-25	2.24 f	3-16-25	3.96 f	1-19-26	4.73 f	3-14-25
2.60 r	9-28-26	1.64 r	8-24-24	2.60 s	3-16-25	4.08 f	4-29-24	2.30 s	11-10-25	4.26 f	4-29-24	6.11 f	10- 3-26
2.78 r	1-18-26	1.80 f	3-29-24	3.20 f	6- 7-24	4.12 s	3-16-25	2.53 s	3-29-24	5.02 f	4-28-24	.....	.....
2.94 s	3-20-25	2.02 f	2-25-26	3.64 f	9-28-26	4.22 f	4-26-24	3.21 f	7-25-24	5.14 f	4-28-24	.....	.....
3.18 f	8-20-24	2.51 f	9- 9-26	3.75 r	8-24-24	4.41 f	5- 1-24	3.33 f	9-17-26	5.46 f	2-26-26	.....	.....
3.19 s	2- 9-25	2.80 f	10- 2-26	4.08 f	6- 6-24	4.53 f	9- 5-26	3.46 f	1-18-26	6.01 f	4- 9-26	.....	.....
3.56 r	3-29-24	2.84 f	6- 5-24	4.72 f	6- 6-24	4.98 f	6-10-24	3.53 f	4- 9-26	6.03 f	6- 9-24	.....	.....
3.72 s	9-13-25	3.09 f	9- 4-26	4.94 f	3-29-24	5.46 f	6- 7-24	3.56 s	3-14-25	6.11 f	9-17-26	.....	.....
4.07 f	3-19-25	3.38 f	8-20-24	5.40 f	2-25-26	5.69 f	9-10-26	4.21 f	3-19-25	6.73 f	9- 7-26	.....	.....
4.36 r	10- 1-26	4.02 f	6- 5-24	5.76 f	8-21-24	5.91 s	3-29-24	4.34 f	4- 8-26	6.76 f	6- 7-24	.....	.....
4.50 s	6- 5-24	4.75	6- 5-24	6.51 r	6- 5-24	6.28 f	6- 6-24	4.58 f	9- 7-26	6.83 f	3-16-25	.....	.....
4.60 f	3-14-25	5.12 f	.....	6.71 f	9- 9-26	6.50 f	6- 6-24	5.41 f	10- 3-27	6.88 f	12-22-24	.....	.....
5.03 f	4- 8-26	.....	.....	6.79 f	6- 6-24	7.03 f	10- 2-27	.....	.....	7.25 f	4- 8-26	.....	.....
5.13 r	2-25-26	.....	.....	7.28 f	10- 1-26	8.30 s	8-20-24	5.71 f	9- 6-26	7.34 r	6- 6-24	.....	.....
5.42 f	12-19-24	.....	.....	7.63 f	10- 2-27	8.34 r	10- 2-26	6.84 f	9- 5-26	7.42 r	8-25-24	.....	.....
5.63 f	9- 4-26	.....	.....	7.90 r	10- 2-26	.....	.....	7.17 f	10- 6-26	7.91 f	9- 6-26	.....	.....
6.06 f	12-19-24	.....	.....	8.15 r	8-20-24	.....	.....	7.93 f	9-10-26	8.60 s	9- 5-26	.....	.....
6.77 f	10- 2-26	.....	.....	.....	.....	.....	.....	10.17 s	10- 2-26	8.73 f	3-14-25	.....	.....
8.73 r	4- 7-26	.....	.....	.....	.....	.....	.....	.....	.....	9.04 f	9-13-26	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9.58 s	3-19-25	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.03 f	10- 8-26	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	11.40 f	9-10-26	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12.71 r	10- 3-26	.....	.....

r, stream rising; f, stream falling; s, stream stationary.

The discharges were computed from the velocity of flow and the cross-sectional area of the channel at the meter station. The velocity measurements were made with a Price current meter, registering single revolutions. All measurements were made from the bridge at the gaging station. All the bridges are single span. Velocity measurements were made at intervals of one, two, or five feet across the channel. For the smaller channels, a one-foot interval was used at the sides of the channel and a two-foot interval over the central portion. For the larger channels, a two-foot interval was used at the sides and a five-foot interval over the central portion. The zero for these measurements was taken at the face of one abutment, and the one-, two-, and five-foot intervals were marked with keel on the floors of the steel bridges and on the parapets of the concrete bridges.

In this way the channel of each stream was divided into a number of partial areas, bounded by the verticals in which velocity measurements were made. Where the depth of water would permit, velocity measurements were made at the surface, mid-point, and bottom of each vertical. In shallow water, measurements were made either at the 0.6 depth or at the surface, depending on the depth. Where the first method was used, the average velocity in the vertical was taken as one-sixth of the sum of the surface velocity, four times the velocity at mid-depth, and the bottom velocity. The average velocity of the water flowing through each partial area was taken as the average of the two average velocities in the two verticals bounding the area. The average velocity of flow in each partial area in feet per second multiplied by the area in square feet gave the discharge in cubic feet per second through that portion of the channel. The sum of the discharges through the partial areas gave the total discharge of the stream.

The meter was held in each position for a minimum of 40 revolutions or for a minimum period of 40 seconds. The time was measured with a stop watch to quarter seconds.

The depth of water at each vertical was determined by lowering the meter until the weight rested on the bottom and reading the depth on the meter cable, which was graduated into 0.5-ft. divisions, to the nearest 0.1 ft. by estimation. These depths were checked later in the office, before discharge computations were made, from a large scale drawing of the previously-determined cross-section of the channel, with the stage of the stream at the time of the measurement plotted upon it.

VI. Slope Measurements

16. *Description of Slope Courses.*—To compute values of Kutter's n, it was necessary to determine the surface slope of the stream at the time of each discharge measurement. With this in view, slope courses were established at each gaging station. The channels draining watersheds Nos. 1 to 6 were dredged channels and were straight at the gaging station. The bottom slopes were reasonably uniform and the cross-sections of the channels were fairly regular. Watershed No. 7 is drained by the Embarrass River, and its channel is not so straight or regular as the others.

For watershed No. 1 a slope course 480 feet in length was used above the gaging station and a second course 550 feet in length was established below the station. The upper course ended about 100 feet above the meter station, and the lower course began about the same distance below. Two courses were used because of a marked difference in the condition of the channel above the station and below. The channel above the station is in Crystal Lake Park, Urbana, and is kept in good condition by the Commissioners; whereas below the gaging station the side slopes are covered with trees. Views of these courses are shown in Figs. 31 and 32.

For watershed No. 2 a slope course of 800 feet was laid off just above the gaging station. Views of this course at different times during the investigation are shown in Fig. 32.

For watershed No. 3 two slope courses were used, both below the gaging station. The length of each course was 330 feet. The views of these courses in Fig. 33 show the side slopes covered with trees.

For watersheds Nos. 4, 5, and 6, single slope courses were used, their lengths being 661, 1000, and 816 feet, respectively. Views of these courses are shown in Figs. 34, 35, and 36.

The slope course established for watershed No. 7 was not satisfactory and the data obtained were not used.

17. *Slope Posts.*—Slope posts were placed at the ends of each slope course, and stakes were driven along the bank, at intervals, where it was desired to take cross-sections of the channel. The slope posts were of 2x4-in. lumber firmly planted in the ground in a position slightly inclined toward the channel. A rectangular notch was cut in the top of each post, and the horizontal portion of the notch was carefully beveled, so that accurate vertical measurements could be made from it. The posts extended above the ground about 3 feet, and three

or four posts were used at each end of each course, the lowest post being in the low-water channel and the upper post at the top of the bank for use during periods of high water.

Bench marks were established on the bridge abutments, and levels were run to determine the elevation of the beveled edge at the top of each slope post. An 18-in. wye level and a target rod were used for this purpose. The elevations were determined to thousandths of a foot and carefully checked. After each high water period, the elevations were rechecked, but only in a few instances were any changes of elevation observed.

18. *Method of Measurement.*—The elevation of the water surface was found by measuring down from the beveled edge of the slope post to the water surface with a specially prepared hook gage, graduated to hundredths of a foot. Each reading was estimated to thousandths of a foot and ten readings were taken for each elevation determination. Two men were used for this work. One man took the ten readings as fast as he could and called them to his assistant, who recorded them. The procedure was as follows: Ten readings were taken for the water level at one end of the course. The time was recorded and the observers hastened to the other end of the course and took ten readings there, noting the time. They then returned to the first end of the course and, when a time equal to that between the first two sets of readings had elapsed, took a second set of readings at that end. The average of the ten readings was used in determining the elevation of the water surface. If there was a difference between the two elevations obtained at one end of the course, due to a change in stage, the average was used to obtain the difference of elevation of the water surface at the ends of the slope course. Since the time required for these measurements was only from ten to fifteen minutes, there was very little, if any, change in the slope course during the measurement. The slope of the water surface was computed from the difference of the elevations of the water surface at the ends of the course and the length of the course.

VII. Measurement of Cross-Sections

19. *Method.*—In computing values of Kutter's n it is necessary to have the cross-sectional area and the hydraulic radius of the slope-course channel in addition to the slope of the water surface. Eleven

cross-sections, at equal intervals, were taken for each slope course during periods of low water when the streams could be waded. The measurements were made with a level, rod, and tape, and all readings were taken to the nearest 0.10 foot. Sufficient readings were taken across the channel to give an accurate cross-section. The data were plotted on standard cross-section paper to a scale of 5 feet to the inch each way for the smaller channels and 10 feet to the inch for the larger ones. The water level at each cross-section during the period of slope measurements was then drawn on the plotted cross-section, and the area of the section found by means of a planimeter. The average of the eleven areas was taken as the area to be used in computing values of n. The wetted perimeters of the several cross-sections were found with a map measurer, and the hydraulic radius of each section was computed. The average of these values of the hydraulic radius was used in computing values of n.

VIII. Rainfall Computations

20. *Plotting.*—The daily rainfall records as turned in by the observers were plotted for the purpose of study on cross-section paper with times as abscissas and rainfalls as ordinates. The time scale was one day to the inch, and the rainfall scale was one inch to the inch. The data for each station were plotted as a monthly summation curve. The curves for the several stations for each month were plotted on the same sheet, one below the other, so that the variations in the amount, distribution, and time of occurrence could be seen at a glance. The rainfalls at Urbana and Staley were plotted first, as these data were obtained from recording gages, for most of the time, and gave the actual distribution of the precipitation during each storm period. The distribution at the other stations was assumed to be in the same ratio as that at Urbana or Staley, depending on which of the two stations was nearest to the station whose data were being plotted. The time scale was large enough so that intervals as small as 30 minutes could be plotted. The times of beginning and ending of each rainfall period, as recorded by the observers, were used when plotting.

21. *Weights Assigned Stations.*—To obtain the average rainfall over each watershed, it was necessary to combine the rainfalls at the several stations in or adjoining the watershed. The rainfall at

TABLE 4
WEIGHTS ASSIGNED RAINFALL STATIONS

Rainfall Station	Watershed						
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7
Urbana	17	15	0	0	0	0	88
Thomasboro	47	0	0	0	0	0	0
Staley	1	77	77	15	0	7	0
Mt. Vernon	35	8	21	2	0	0	0
Mahomet	0	0	2	73	0	0	0
White Heath	0	0	0	10	0	0	0
Bement	0	0	0	0	75	10	0
Giblin	0	0	0	0	25	62	0
Sadorus	0	0	0	0	0	21	12
	100	100	100	100	100	100	100

each station was assumed to extend half way to the adjoining stations. The area controlled by each station was measured with a planimeter, and the percentage of this area with respect to the area of the watershed was computed. The percentages, or weights, given each station for the seven watersheds are shown in Table 4.

22. *Average Rainfall over Watersheds.*—Monthly summation curves were then computed and plotted for each watershed. Each of these curves was a composite curve computed by applying the weights given in Table 4 to the rainfalls at the individual stations. The large horizontal scale of one inch to the day enabled the daily distribution of the precipitation to be shown clearly. Obviously, it was impossible to reproduce these work sheets to scale in this bulletin. The daily values, however, are tabulated in Table 5, and monthly summation curves to a much smaller scale are shown in Figs. 7-30. In general, the rainfall values recorded in the table for each day are from midnight to midnight. However, where a continuous rain began before midnight and ended after midnight, the total amount is recorded in the table on the day on which the major portion of the rain fell, provided the rainfall period did not exceed 24 hours.

In order that the rainfalls at the regular Weather Bureau stations nearby might be compared with those obtained on the watersheds themselves, the records from the stations at Tuscola, Decatur, Danville, Clinton, and Roberts are included in Table 5. The general locations of these stations are shown in Fig. 1.

Table 5
Rainfall and Run-Off Data

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville*
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
Mar. 1	....	.....	....	....	0.045	....	.....	....	.....	....	.....	....	.....	....	....	....	....	....	....
2	....	.....	....	....	0.040	....	.....	....	.....	....	.....	....	.....	....	....	....	....	....	....
3	....	.....	....	....	0.045	....	.....	....	.....	....	.....	....	.....	....	....	....	....	....	....
4	0.12	.....	0.10	0.10	0.058	0.13	.....	0.10	.....	0.10	.....	0.08	.....	0.08	0.07	0.09	0.05	....	....
5	....	.....	....	....	0.058	....	.....	....	.....	....	.....	....	.....	T	....	....	....	....	....
6	0.14	.....	0.20	0.21	0.061	0.14	.....	0.22	.....	0.21	.....	0.12	.....	0.09	0.14	0.21	0.26	0.04	....
7	....	.....	....	....	0.055	....	.....	....	.....	....	.....	0.06	.....	0.10	0.04	0.06	....	T	....
8	....	.....	....	....	0.052	....	.....	....	.....	....	.....	....	.....	....	....	....	....	....	....
9	0.29	.....	0.30	0.27	0.042	0.24	.....	0.28	.....	0.29	.....	0.34	.....	0.26	0.33	0.40	0.26	0.14	....
10	0.05	.....	0.05	0.05	0.037	0.12	.....	0.02	.....	0.03	.....	0.12	.....	0.19	0.28	0.08	0.09	0.15	....
11	0.02	.....	0.02	0.02	0.048	0.02	.....	0.04	.....	0.03	.....	0.01	.....	0.02	0.03	T	0.06	0.02	....
12	....	.....	....	....	0.042	....	.....	....	.....	....	.....	0.03	.....	T	....	T	0.05	T	....
13	0.02	.....	0.02	0.03	0.076	....	.....	....	.....	....	.....	0.02	.....	0.04	....	T	T	0.01	....
14	0.01	.....	....	....	0.073	0.03	.....	....	.....	....	.....	....	.....	T	T	T	0.03	....	....
15	....	.....	....	....	0.058	....	.....	....	.....	....	.....	....	.....	T	....	T	T	0.02	....
16	....	.....	....	....	0.058	....	.....	....	0.032†	....	.....	....	.....	....	....	....	....	....	....
17	0.02	.....	0.15	0.15	0.058	0.07	.....	0.02	0.032	0.09	.....	0.02	.....	0.02	....	0.07	0.03	T	....
18	....	0.042	....	....	0.055	....	.....	0.01	0.032	....	.....	0.02	.....	0.01	T	....	T	....	....
19	....	0.040	....	....	0.055	....	.....	....	0.030	....	.....	....	.....	....	....	....	....	....	....
20	0.13	0.039	0.08	0.05	0.055	0.05	.....	0.19	0.030	0.12	.....	0.26	.....	0.21	0.50	0.41	0.38	0.12	....
21	0.04	0.039	0.03	0.02	0.045	0.07	.....	0.04	0.029	0.05	.....	0.10	.....	0.15	0.15	0.28	0.08	0.10	....
22	....	0.037	....	....	0.052	....	.....	....	0.030	....	.....	....	.....	....	....	....	....	T	....
23	....	0.058	....	....	0.067	....	.....	0.02	0.032	0.01	.....	....	.....	T	....	0.02	T	T	....
24	....	0.050	....	....	0.064	....	.....	....	0.030	....	.....	....	.....	....	....	....	....	....	....
25	0.14	0.050	0.09	0.10	0.070	0.08	.....	0.09	0.039	0.09	.....	0.05	.....	0.04	0.03	0.10	0.05	T	....
26	0.10	0.055	0.18	0.20	0.076	0.27	.....	....	0.032	0.07	.....	0.05	.....	0.07	T	0.03	0.10	0.05	....
27	....	0.054	....	....	0.076	0.22	.....	....	0.032	....	.....	....	.....	....	....	....	....	....	....
28	0.90	0.050	0.84	0.88	0.073	0.74	.....	0.11	0.039	0.49	.....	0.78	.....	0.34	0.60	0.45	0.20	0.37	....
29	0.65	0.225	0.87	0.87	0.291	0.74	.....	0.26	0.194	0.48	.....	0.60	.....	1.04	0.78	1.14	2.25	1.68	....
30	....	0.191	....	....	0.212	....	.....	....	0.123	....	.....	0.02	.....	0.02	T	T	T	T	....
31	0.03	0.143	0.03	0.04	0.161	0.12	.....	0.12	0.078	0.08	.....	0.06	.....	0.06	T	0.07	0.08	0.02	....
Total	2.66	1.07	2.96	2.99	2.26	3.04	.....	1.52	0.81	2.14	.....	2.74	.....	2.74	2.95	3.41	3.97	2.72	....

*Not read in March. †Gage installed on this date.

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
Apr. 1	0.03	0.111	0.02	0.02	0.124	....	0.107	....	0.068	0.02	.....	0.02	.....	0.01	0.03	0.05	0.04	T	T
2	....	0.091	....	....	0.114	....	0.090	....	0.061	....	.....	....	.....	0.01	....	T	....	....	....
3	....	0.078	....	....	0.099	....	0.078	....	0.045	....	.....	....	.....	....	....	....	....	....	....
4	....	0.074	....	....	0.089	....	0.067	....	0.039	....	.....	....	.....	....	....	....	....	....	....
5	....	0.061	....	....	0.076	0.05	0.056	....	0.036	....	.....	....	0.045*	....	....	....	....	T	....
6	0.02	0.056	....	0.02	0.067	....	0.048	0.03	0.032	0.02	.....	....	0.045	T	....	....	....	....	....
7	....	0.051	....	....	0.061	0.07	0.042	0.05	0.032	....	.....	....	0.033	....	....	....	....	....	....
8	0.09	0.047	0.10	0.09	0.067	0.04	0.035	0.02	0.030	0.03	.....	....	0.031	....	0.08	0.24	0.03	0.02	....
9	....	0.044	....	....	0.067	....	0.029	0.02	0.029	....	.....	0.03	0.028	0.03	0.09	0.05	0.38	....	T
10	....	0.039	....	....	0.058	....	0.025	....	0.026	....	.....	....	0.026	....	....	....	....	....	....
11	....	0.037	....	....	0.058	....	0.025	....	0.026	....	.....	....	0.024	....	....	....	....	....	....
12	....	0.037	....	....	0.055	....	0.024	....	0.024	....	.....	....	0.023	....	....	....	....	T	....
13	....	0.035	....	....	0.052	....	0.024	....	0.024	....	0.019*	....	0.021	....	....	....	....	....	....
14	0.06	0.034	0.30	0.25	0.052	0.05	0.024	....	0.024	....	0.019	0.27	0.019	....	....	0.05	....	0.35	....
15	....	0.034	....	0.02	0.052	....	0.022	0.06	0.023	0.28	0.019	....	0.019	0.32	....	....	....	....	....
16	0.63	0.035	0.53	0.52	0.048	0.44	0.021	0.37	0.023	0.35	0.023	0.70	0.031	0.30	1.75	....	0.05	0.15	0.57
17	0.06	0.034	....	0.03	0.045	0.12	0.019	....	0.023	0.08	0.025	....	0.043	0.34	0.25	0.08	0.04	0.19	0.34
18	....	0.031	....	....	0.042	....	0.019	....	0.021	....	0.022	....	0.039	....	....	....	....	....	....
19	0.13	0.030	0.18	0.16	0.042	0.10	0.019	0.31	0.023	0.14	0.020	0.16	0.033	....	0.10	T	0.07	0.10	0.12
20	....	0.030	....	....	0.040	....	0.019	....	0.021	0.04	0.020	....	0.028	0.15	....	0.08	....	....	....
21	0.26	0.029	0.20	0.19	0.045	0.19	0.019	0.02	0.023	0.06	0.019	0.14	0.026	0.14	T	0.05	0.13	0.35	0.12
22	....	0.028	....	....	0.045	....	0.019	....	0.019	....	0.018	....	0.023	0.01	....	....	....	T	....
23	....	0.025	....	....	0.048	....	0.019	....	0.019	....	0.015	....	0.017	....	....	....	....	....	....
24	....	0.025	....	....	0.048	....	0.019	....	0.018	....	0.015	....	0.015	....	T	....	....	....	....
25	1.33	0.030	0.87	1.05	0.072	1.04	0.024	0.50	0.018	0.38	0.015	0.76	0.019	....	0.30	....	....	0.21	0.62
26	....	0.091	0.66	0.37	0.118	....	0.098	....	0.019	0.50	0.016	....	0.033	0.78	....	1.50	2.58	0.55	0.57
27	0.77	0.069	0.51	0.80	0.136	0.68	0.122	0.99	0.039	0.87	0.045	0.82	0.069	0.52	1.20	T	0.16	0.03	0.79
28	0.23	0.141	....	....	0.130	....	0.122	....	0.032	....	0.069	....	0.080	0.28	....	0.08	....	....	0.02
29	....	0.098	....	....	0.111	....	0.095	....	0.032	....	0.052	....	0.057	....	....	....	....	0.02	....
30	0.56	0.098	0.84	0.83	0.127	0.72	0.122	0.59	0.029	0.61	0.045	0.70	0.067	0.72	0.50	0.45	0.35	0.37	0.67
Total	4.17	1.62	4.21	4.35	2.19	3.50	1.45	2.96	0.88	3.38	0.48	3.60	0.89	3.61	4.30	2.63	3.83	2.25	3.82

*Gage installed on this date.

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
May 1	....	0.086	....	....	0.124	....	0.122	....	0.030	....	0.082	....	0.065	....	....	0.03	0.45	0.03	0.03
2	0.06	0.069	0.15	0.12	0.105	0.20	0.095	....	0.028	0.02	0.073	0.12	0.055	....	....	....	....	....	T
3	0.21	0.064	0.03	0.08	0.093	....	0.078	0.23	0.023	0.17	0.064	0.05	0.047	0.15	0.17	0.08	0.10	0.08	T
4	....	0.055	....	....	0.076	....	0.063	....	0.024	....	0.056	....	0.037	0.01	....	....	....	....	T
5	....	0.059	....	....	0.073	....	0.059	....	0.023	....	0.049	....	0.028	....	....	....	....	....	T
6	0.18	0.043	0.13	0.13	0.067	0.03	0.054	....	0.021	0.01	0.047	0.03	0.026	....	0.11	....	0.79	0.01	0.02
7	0.39	0.043	0.50	0.47	0.067	0.36	0.051	0.42	0.023	0.37	0.043	0.50	0.026	0.04	0.32	0.05	0.20	0.40	0.61
8	0.10	0.044	....	0.02	0.067	0.04	0.051	0.03	0.023	0.08	0.042	0.02	0.024	0.50	....	0.08	0.04	....	0.25
9	....	0.042	....	....	0.064	....	0.048	0.14	0.021	0.02	0.038	....	0.023	0.02	....	....	T	....	T
10	0.03	0.035	0.10	0.12	0.058	0.12	0.044	0.02	0.019	0.03	0.036	....	0.023	....	....	T	0.04	....	0.04
11	....	0.034	....	....	0.055	....	0.042	....	0.018	....	0.034	....	0.023	T	0.12	T	....	....	0.02
12	....	0.034	....	....	0.052	....	0.042	....	0.018	....	0.031	....	0.019	....	....	0.02	....	....	T
13	0.03	0.034	0.04	0.03	0.055	0.02	0.044	0.04	0.019	0.08	0.032	0.06	0.015	0.02	....	0.01	....	T	T
14	0.05	0.033	0.04	0.05	0.055	0.03	0.044	0.02	0.018	....	0.031	....	0.015	0.03	....	....	....	0.13	0.06
15	0.05	0.026	....	....	0.055	....	0.042	....	0.018	0.02	0.031	....	0.015	T	....	....	0.12	....	T
16	....	0.023	....	....	0.055	....	0.044	....	0.018	....	0.029	....	0.012	....	....	0.08	....	T	T
17	0.62	0.028	0.76	0.76	0.055	0.57	0.044	0.55	0.016	0.58	0.029	0.66	0.010	....	....	....	....	T	T
18	....	0.023	....	....	0.067	....	0.051	....	0.016	....	0.030	....	0.014	0.63	0.55	0.50	0.46	0.42	0.64
19	....	0.022	....	....	0.052	....	0.044	0.03	0.016	0.02	0.028	....	0.014	....	0.15	....	....	....	0.06
20	0.02	0.022	....	....	0.052	0.01	0.044	....	0.016	....	0.025	....	0.012	T	....	0.07	....	0.08	T
21	....	0.022	....	....	0.052	....	0.044	....	0.014	....	0.024	....	0.010	T	....	T	....	....	T
22	0.03	0.022	0.03	0.02	0.052	....	0.044	....	0.014	....	0.023	0.02	0.006	....	....	....	0.15	T	T
23	0.36	0.022	0.57	0.54	0.052	0.37	0.044	0.20	0.016	0.27	0.024	0.45	0.014	0.02	0.17	0.05	0.50	0.14	0.17
24	0.06	0.023	0.10	0.12	0.052	0.12	0.044	0.28	0.014	0.26	0.025	0.05	0.023	0.50	T	0.57	0.15	T	0.67
25	0.05	0.017	....	0.02	0.048	....	0.044	0.02	0.014	0.02	0.023	....	0.014	....	....	....	....	....	T
26	....	0.017	....	....	0.045	0.08	0.044	0.03	0.013	0.05	0.024	0.05	0.012	0.01	....	0.03	....	....	....
27	0.07	0.017	0.02	....	0.048	....	0.044	0.11	0.014	0.03	0.021	0.02	0.012	0.05	0.35	0.15	0.05	....	T
28	0.03	0.017	....	....	0.048	....	0.044	....	0.013	....	0.020	....	0.012	0.02	....	0.07	0.03	....	0.22
29	0.72	0.017	0.80	0.84	0.064	0.87	0.056	1.01	0.019	0.87	0.023	0.73	0.012	0.34	1.26	1.25	0.07	0.28	0.50
30	....	0.021	....	....	0.061	0.02	0.067	....	0.018	....	0.030	....	0.012	0.35	....	0.45	0.76	....	....
31	0.02	0.020	0.03	....	0.058	....	0.063	....	0.019	....	0.031	0.09	0.012	0.10	....	....	....	....	....
Total	3.08	1.03	3.30	3.32	1.93	2.84	1.64	3.13	0.58	2.90	1.10	2.85	0.64	2.79	3.20	3.49	3.91	1.57	3.29

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
June 1	0.98	0.023	0.80	0.83	0.055	0.72	0.024	1.20	0.024	0.90	0.037	0.68	0.039	0.14	0.72	0.50	0.45	0.50	0.58
2	....	0.035	....	0.03	0.063	0.02	0.036	....	0.028	0.25	0.060	0.14	0.055	0.54	0.06	0.16	....	0.12	0.04
3	0.26	0.061	1.09	0.97	0.069	0.28	0.036	0.05	0.028	0.20	0.079	0.82	0.082	0.94	0.14	0.12	....	....	1.33
4	0.02	0.052	....	....	0.066	0.06	0.034	0.31	0.029	0.07	0.092	....	0.077	0.02	0.11	....	0.08	T	....
5	1.84	0.106	1.98	2.00	0.137	2.07	0.085	1.02	0.078	1.58	0.081	1.87	0.140	0.01	0.08	0.08	0.72	0.52	0.91
6	....	0.338	....	....	0.306	....	0.241	....	0.201	....	0.163	....	0.258	1.99	0.65	0.60	0.68	T	1.20
7	....	0.182	....	....	0.164	....	0.153	0.52	0.105	0.07	0.165	....	0.120	....	....	....	....	....	....
8	0.75	0.200	0.70	0.74	0.183	0.63	0.187	0.15	0.139	0.48	0.144	0.50	0.111	0.54	0.75	0.50	0.76	0.58	0.60
9	....	0.158	0.02	0.03	0.148	....	0.153	....	0.084	....	0.139	....	0.103	T	....	....	....	0.77	....
10	....	0.086	0.03	0.02	0.105	....	0.112	....	0.061	....	0.110	0.03	0.094	0.02	....	0.03	0.02	T	....
11	....	0.068	....	....	0.093	0.02	0.085	....	0.048	....	0.092	....	0.071	....	....	....	....	....	....
12	0.02	0.057	0.06	0.08	0.079	....	0.066	....	0.042	....	0.079	0.02	0.061	0.01	....	0.02	0.03	T	....
13	....	0.048	....	....	0.066	....	0.052	....	0.032	....	0.069	....	0.052	T	....	0.03	....	....	....
14	....	0.042	....	....	0.061	....	0.046	....	0.028	....	0.060	....	0.045	....	....	....	....	....	....
15	....	0.040	....	....	0.055	....	0.044	....	0.026	....	0.054	0.03	0.035	0.03	....	0.03	0.20	0.43	....
16	....	0.035	....	....	0.052	....	0.039	....	0.024	....	0.046	....	0.024	....	....	....	....	T	....
17	....	0.029	....	....	0.049	....	0.036	....	0.023	....	0.041	....	0.019	....	....	....	0.05	T	....
18	0.02	0.028	....	....	0.046	....	0.036	....	0.021	....	0.035	....	0.019	T	....	0.07	....	....	....
19	....	0.024	....	....	0.046	....	0.036	....	0.019	....	0.031	....	0.019	....	....	....	....	....	....
20	1.66	0.029	1.20	1.22	0.060	1.55	0.049	1.87	0.029	1.50	0.034	1.50	0.026	....	2.12	....	0.28	0.25	1.80
21	....	0.068	....	....	0.114	....	0.147	....	0.105	....	0.088	....	0.045	1.52	0.14	0.83	....	....	0.15
22	0.36	0.055	0.63	0.62	0.055	0.60	0.131	0.40	0.083	0.75	0.082	0.52	0.059	0.02	0.32	....	3.25	0.48	0.57
23	0.25	0.055	0.30	0.26	0.108	0.07	0.211	....	0.194	0.05	0.102	0.37	0.065	0.88	0.07	1.10	0.05	....	0.18
24	0.57	0.051	0.99	0.91	0.090	0.36	0.141	0.44	0.123	0.40	0.094	0.82	0.059	....	0.15	....	0.75	0.35	0.22
25	....	0.091	....	0.02	0.193	0.64	0.211	0.36	0.194	0.45	0.115	....	0.089	0.82	0.40	1.42	....	1.12	0.34
26	0.20	0.100	0.15	0.14	0.111	0.18	0.199	0.06	0.116	0.03	0.122	0.15	0.077	....	0.22	....	0.18	0.15	0.93
27	....	0.073	....	....	0.096	....	0.131	....	0.078	....	0.098	....	0.065	0.18	....	0.10	0.75	....	1.15
28	1.49	0.243	1.19	1.24	0.223	1.18	0.240	0.40	0.078	0.57	0.093	0.87	0.136	0.91	0.30	0.22	....	1.00	....
29	....	0.214	....	....	0.155	....	0.199	....	0.068	....	0.092	....	0.108	0.01	0.12	....	0.02	....	....
30	....	0.164	....	....	0.105	....	0.126	....	0.052	....	0.079	....	0.077	....	....	T	....	....	....
Total	8.42	2.77	9.14	9.11	3.15	8.38	3.29	6.78	2.16	7.30	2.58	8.32	2.23	8.58	6.35	5.81	8.27	6.27	10.00

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
July 1	....	0.097	....	....	0.079	....	0.088	....	0.032	....	0.040	....	0.065	....	....	....	....	....	....
2	....	0.071	....	....	0.063	....	0.066	....	0.028	....	0.032	....	0.049	....	....	....	....	T	....
3	....	0.053	....	....	0.055	....	0.052	....	0.026	....	0.028	....	0.039	....	....	....	....	....	0.17
4	0.01	0.046	....	....	0.055	....	0.042	....	0.024	....	0.024	....	0.035	....	....	....	....	T	....
5	....	0.037	....	....	0.052	....	0.032	....	0.023	....	0.020	....	0.029	....	....	....	....	....	....
6	....	0.032	....	....	0.049	0.07	0.026	....	0.021	....	0.019	....	0.026	....	....	....	....	....	....
7	0.14	0.030	....	....	0.043	0.08	0.019	....	0.018	....	0.016	....	0.021	....	....	0.02	....	T	....
8	....	0.026	....	....	0.043	....	0.017	....	0.016	....	0.015	....	0.017	....	....	....	....	0.04	....
9	0.20	0.026	0.35	0.35	0.043	0.24	0.014	0.30	0.014	0.45	0.014	0.38	0.014	0.02	0.18	....	0.25	0.08	0.16
10	....	0.023	....	....	0.043	....	0.012	....	0.016	....	0.014	....	0.012	0.32	....	0.33	....	....	0.14
11	....	0.022	....	....	0.038	....	0.010	....	0.016	....	0.013	....	0.006	....	....	....	....	....	....
12	0.41	0.022	0.52	0.50	0.038	0.34	0.008	0.35	0.018	0.53	0.013	0.35	0.003	0.07	0.58	0.02	0.08	0.65	0.11
13	....	0.017	....	....	0.033	....	0.007	....	0.018	....	0.012	....	0.000	0.30	....	0.12	....	0.15	0.04
14	....	0.016	....	....	0.033	....	0.005	....	0.014	....	0.011	....	0.000	....	....	T	....	....	....
15	....	0.015	....	....	0.030	....	0.004	....	0.013	....	0.011	....	0.000	....	....	....	....	....	....
16	....	0.014	....	....	0.030	0.01	0.002	....	0.012	....	0.011	....	0.000	....	0.50	....	....	....	....
17	0.02	0.015	0.01	0.01	0.030	0.01	0.000	1.06	0.016	0.42	0.011	0.12	0.000	0.07	....	0.12	0.07	....	....
18	....	0.013	....	....	0.028	0.01	0.000	....	0.013	....	0.011	....	0.000	....	....	....	....	....	....
19	....	0.012	....	....	0.028	....	0.000	0.08	0.016	0.02	0.010	....	0.000	....	....	0.02	....	T	....
20	....	0.012	....	....	0.025	....	0.000	....	0.013	....	0.009	....	0.000	T	....	....	T	T	....
21	....	0.012	....	....	0.023	0.05	0.000	....	0.010	....	0.009	....	0.000	....	....	T	....	0.06	0.06
22	....	0.010	....	....	0.023	....	0.000	....	0.006	....	0.007	....	0.000	....	....	0.02	0.20	....	....
23	....	0.009	....	....	0.023	....	0.000	....	0.010	....	0.006	....	0.000	....	....	....	....	....	....
24	0.10	0.008	0.09	0.11	0.023	0.18	0.000	0.03	0.013	0.15	0.006	0.10	0.000	....	0.07	....	0.50	T	T
25	0.08	0.008	....	....	0.018	....	0.000	....	0.010	....	0.005	....	0.000	0.06	....	0.60	....	0.20	....
26	....	0.008	....	....	0.018	....	0.000	....	0.006	....	0.004	....	0.000	....	0.12	....	....	....	....
27	....	0.007	....	....	0.013	....	0.000	....	0.006	....	0.004	....	0.000	0.02	....	....	0.05	....	0.17
28	....	0.006	....	....	0.013	....	0.000	....	0.006	....	0.004	....	0.000	....	....	....	....	....	....
29	....	0.006	....	....	0.013	....	0.000	....	0.006	....	0.004	....	0.000	....	....	....	....	....	....
30	....	0.006	....	....	0.013	....	0.000	....	0.006	....	0.004	....	0.000	....	....	....	0.10	0.05	....
31	....	0.006	....	....	0.013	....	0.000	....	0.006	....	0.004	....	0.000	....	....	0.10	....	T	....
Total	0.96	0.68	0.97	0.97	1.03	0.99	0.40	1.82	0.45	1.57	0.39	0.95	0.32	0.86	1.45	1.35	1.25	1.23	0.85

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
Aug. 1	....	0.006	....	....	0.013	....	0.000	....	0.006	....	0.004	....	0.000	....	....	....	....	....	....
2	0.44	0.006	0.43	0.45	0.011	0.43	0.000	0.08	0.006	0.22	0.003	0.31	0.000	0.09	0.50	0.34	0.90	0.25	0.73
3	....	0.006	....	....	0.011	....	0.000	....	0.006	....	0.002	....	0.000	0.24	....	....	....	....	....
4	....	0.004	....	....	0.009	....	0.000	....	0.006	....	0.002	....	0.000	....	0.06	....	....	....	....
5	....	0.004	....	....	0.009	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
6	0.19	0.003	0.18	0.21	0.007	0.26	0.000	0.13	0.006	0.10	0.002	0.11	0.000	....	....	....	0.23	0.20	0.01
7	....	0.002	....	....	0.007	....	0.000	....	0.006	....	0.002	....	0.000	0.13	....	0.10	....	....	....
8	1.92	0.008	1.54	1.55	0.007	1.69	0.000	0.77	0.006	1.08	0.002	1.30	0.000	....	....	....	0.25	0.50	0.05
9	....	0.030	....	....	0.033	....	0.000	....	0.006	....	0.002	0.11	0.008	1.41	0.94	0.66	0.77	2.15	2.93
10	....	0.022	....	....	0.013	....	0.000	0.02	0.006	....	0.002	....	0.010	....	....	....	0.03	....	....
11	0.09	0.013	....	....	0.011	0.01	0.000	....	0.008	....	0.002	0.01	0.000	T	0.24	0.10	....	0.11	0.11
12	....	0.012	....	....	0.009	....	0.000	....	0.006	....	0.002	....	0.000	0.01	....	0.04	....	0.04	0.07
13	0.02	0.010	0.01	0.02	0.007	....	0.000	0.02	0.008	....	0.002	....	0.000	....	....	....	....	....	0.01
14	....	0.009	....	....	0.005	....	0.000	....	0.008	....	0.002	....	0.000	0.01	....	....	....	....	....
15	0.01	0.006	....	....	0.005	....	0.000	....	0.008	....	0.002	....	0.000	....	....	T	....	T	....
16	....	0.006	....	....	0.005	....	0.000	....	0.008	0.02	0.002	0.02	0.000	T	....	0.20	....	0.23	0.02
17	....	0.006	....	....	0.005	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
18	....	0.006	....	....	0.005	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	T	....
19	1.61	0.006	2.54	2.57	0.005	2.49	0.000	1.36	0.006	1.75	0.002	2.29	0.005	....	0.60	....	1.00	0.65	....
20	1.79	0.261	2.38	2.36	0.513	3.14	0.210	1.73	0.094	1.73	0.017	1.71	0.193	3.90	2.05	0.15	1.65	1.65	1.85
21	....	0.193	....	....	0.402	....	0.299	....	0.100	....	0.081	....	0.148	0.22	....	0.28	....	....	....
22	....	0.109	....	....	0.179	....	0.117	....	0.058	....	0.052	....	0.080	....	....	....	....	....	....
23	....	0.069	....	....	0.111	....	0.070	....	0.032	....	0.029	....	0.063	....	....	....	....	....	....
24	1.19	0.086	1.52	1.45	0.158	1.36	0.097	1.99	0.100	1.92	0.038	1.70	0.201	0.15	2.05	0.40	2.10	0.78	0.81
25	....	0.116	....	....	0.167	....	0.126	....	0.155	....	0.125	....	0.182	1.49	....	1.48	....	....	....
26	....	0.077	....	....	0.108	....	0.078	....	0.080	....	0.113	....	0.114	....	....	....	....	....	....
27	....	0.056	....	....	0.086	....	0.046	....	0.061	....	0.079	....	0.097	....	....	....	....	....	....
28	....	0.041	....	....	0.069	....	0.026	....	0.048	....	0.050	....	0.092	....	....	....	....	....	....
29	....	0.032	....	....	0.075	....	0.014	....	0.042	....	0.033	....	0.059	....	....	....	....	....	....
30	....	0.026	....	....	0.049	....	0.008	....	0.032	....	0.026	....	0.028	....	....	....	....	....	....
31	1.10	0.021	0.79	0.82	0.040	1.56	0.004	0.43	0.026	0.51	0.020	0.77	0.028	0.88	....	....	0.90	0.20	....
Total	8.36	1.25	9.39	9.43	2.13	10.94	1.10	6.53	0.95	7.33	0.71	8.33	1.31	8.53	6.44	3.75	7.83	6.76	6.59

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
Sept. 1	0.35	0.071	0.48	0.51	0.079	0.51	0.011	0.58	0.023	0.55	0.019	0.39	0.047	....	0.50	0.27	0.75	0.90	1.66
2	....	0.060	....	....	0.058	....	0.014	....	0.023	....	0.021	....	0.045	0.36	0.50	0.75	....	....	0.65
3	....	0.046	....	....	0.040	....	0.010	....	0.019	....	0.019	....	0.037	....	....	....	....	....	....
4	....	0.034	....	....	0.035	....	0.005	....	0.016	....	0.016	....	0.029	....	....	....	....	T	....
5	....	0.029	....	....	0.035	....	0.001	....	0.013	....	0.014	....	0.024	....	....	....	....	....	....
6	....	0.023	....	....	0.028	....	0.000	....	0.010	....	0.013	....	0.012	....	....	....	....	....	....
7	....	0.020	....	....	0.023	....	0.000	0.04	0.012	....	0.012	....	0.000	....	....	T	....	0.25	....
8	0.05	0.017	0.03	0.01	0.025	0.07	0.000	....	0.012	0.01	0.009	0.09	0.000	0.08	....	0.04	0.04	T	0.07
9	....	0.015	....	....	0.025	....	0.000	....	0.012	....	0.008	....	0.000	0.02	....	0.02	....	....	....
10	....	0.012	....	....	0.023	....	0.000	....	0.010	....	0.006	0.03	0.000	....	....	....	T	0.28	0.10
11	0.07	0.013	0.13	0.14	0.023	0.10	0.000	0.19	0.010	0.08	0.006	0.05	0.000	0.02	0.55	0.12	0.06	0.12	0.11
12	0.04	0.013	0.04	0.02	0.020	0.03	0.000	....	0.008	....	0.006	0.02	0.000	0.06	....	0.11	0.05	....	T
13	....	0.013	....	....	0.018	....	0.000	....	0.008	....	0.005	....	0.000	0.02	....	....	....	....	....
14	....	0.012	....	....	0.018	....	0.000	....	0.006	....	0.004	....	0.000	....	....	....	....	....	....
15	....	0.012	....	....	0.013	....	0.000	....	0.006	....	0.004	....	0.000	....	....	....	....	....	....
16	0.12	0.012	....	0.02	0.018	0.04	0.000	0.02	0.006	0.04	0.004	0.04	0.000	....	....	....	0.10	T	....
17	0.11	0.010	....	....	0.018	....	0.000	....	0.006	....	0.004	....	0.000	0.05	....	0.04	....	....	0.03
18	....	0.010	....	....	0.018	....	0.000	....	0.006	0.28	0.004	....	0.000	....	....	....	....	....	....
19	0.15	0.010	0.07	0.07	0.020	0.26	0.000	0.35	0.006	0.14	0.004	0.25	0.000	T	0.18	....	0.70	0.20	0.11
20	0.18	0.010	0.20	0.17	0.020	0.04	0.000	....	0.006	0.12	0.004	0.36	0.010	0.57	1.07	0.12	0.10	....	1.37
21	0.36	0.010	0.44	0.42	0.033	0.66	0.000	0.41	0.006	0.22	0.004	0.28	0.008	0.02	0.11	....	0.12	0.20	0.14
22	....	0.010	....	....	0.013	....	0.000	....	0.010	....	0.004	....	0.008	0.26	....	0.22	....	....	....
23	....	0.010	....	....	0.020	....	0.000	....	0.006	....	0.003	....	0.000	....	....	....	....	....	....
24	....	0.008	....	....	0.013	....	0.000	....	0.006	....	0.003	....	0.000	....	....	....	....	....	....
25	....	0.006	....	....	0.013	....	0.000	....	0.006	....	0.003	....	0.000	....	....	....	....	....	....
26	....	0.006	....	....	0.013	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
27	0.45	0.009	0.16	0.11	0.013	0.24	0.000	0.28	0.006	0.27	0.002	0.63	0.000	....	....	....	0.40	0.27	....
28	....	0.009	....	....	0.011	....	0.000	....	0.008	....	0.002	....	0.000	0.66	0.16	0.35	0.15	....	0.10
29	....	0.006	....	....	0.011	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
30	....	0.006	....	....	0.011	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
Total	1.88	0.52	1.55	1.47	0.71	1.95	0.04	1.87	0.28	1.71	0.21	2.14	0.22	2.12	3.07	2.04	2.47	2.22	4.34

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
Oct. 1	....	0.006	....	....	0.011	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
2	....	0.006	....	....	0.011	....	0.000	0.48	0.006	0.08	0.002	....	0.000	....	....	....	....	....	....
3	....	0.006	....	....	0.011	0.22	0.000	0.03	0.006	0.05	0.002	....	0.000	....	....	....	....	....	....
4	0.23	0.006	0.35	0.38	0.009	0.02	0.000	....	0.008	0.09	0.002	0.27	0.000	0.27	0.08	0.27	1.30	0.62	0.21
5	0.12	0.005	....	....	0.009	....	0.000	....	0.006	....	0.002	....	0.000	T	....	....	....	T	....
6	....	0.004	....	....	0.009	....	0.000	....	0.006	....	0.003	....	0.000	....	....	....	....	....	....
7	0.33	0.006	0.81	0.79	0.033	0.67	0.000	1.17	0.016	0.84	0.003	0.73	0.008	0.72	0.60	0.78	1.94	0.20	0.38
8	0.40	0.007	0.40	0.40	0.023	0.27	0.000	0.13	0.016	0.42	0.003	0.25	0.008	0.24	0.32	1.10	....	....	0.03
9	....	0.006	....	....	0.020	....	0.002	....	0.019	....	0.003	....	0.000	....	....	....	....	....	....
10	....	0.005	....	....	0.018	....	0.001	....	0.013	....	0.004	....	0.000	....	....	....	....	....	....
11	....	0.004	....	....	0.018	....	0.001	....	0.013	....	0.004	....	0.000	....	....	....	....	....	....
12	....	0.004	....	....	0.015	....	0.001	....	0.012	....	0.004	....	0.000	....	....	....	....	....	....
13	....	0.004	....	....	0.015	....	0.000	....	0.012	....	0.004	....	0.000	....	....	....	....	....	....
14	....	0.004	....	....	0.015	....	0.000	....	0.010	....	0.004	....	0.000	....	....	....	....	....	....
15	....	0.002	....	....	0.015	....	0.000	....	0.023	....	0.004	....	0.000	....	....	....	....	....	....
16	....	0.002	....	0.01	0.017	0.02	0.000	....	0.019	....	0.004	....	0.000	....	....	....	....	T	....
17	....	0.002	....	....	0.019	....	0.000	....	0.018	....	0.004	....	0.000	....	....	....	....	....	....
18	....	0.002	....	....	0.021	....	0.000	....	0.016	....	0.003	....	0.000	....	....	....	....	....	....
19	....	0.002	....	....	0.024	....	0.000	....	0.014	....	0.003	....	0.000	....	....	....	....	....	....
20	....	0.003	....	....	0.028	....	0.000	....	0.013	....	0.003	....	0.000	....	....	....	....	....	....
21	....	0.003	....	....	0.028	....	0.000	....	0.012	....	0.003	....	0.000	....	....	....	....	....	....
22	....	0.002	....	....	0.020	....	0.000	....	0.010	....	0.003	....	0.000	....	....	....	....	....	....
23	....	0.002	....	....	0.020	....	0.000	....	0.008	....	0.002	....	0.000	....	....	....	....	....	....
24	....	0.002	....	....	0.020	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
25	....	0.002	....	....	0.020	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
26	....	0.001	....	....	0.020	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
27	....	0.001	....	....	0.020	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
28	....	0.001	....	....	0.020	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
29	....	0.001	....	....	0.020	....	0.000	....	0.006	....	0.002	....	0.000	....	0.14	....	....	....	....
30	....	0.001	....	....	0.020	....	0.000	0.04	0.003	0.08	0.002	....	0.000	....	....	....	....	....	....
31	0.16	0.002	0.04	0.05	0.020	0.14	0.000	....	0.003	0.03	0.002	0.14	0.000	0.13	....	0.17	0.15	0.11	0.11
Total	1.24	0.10	1.60	1.63	0.57	1.34	0.00	1.85	0.32	1.59	0.09	1.39	0.02	1.36	1.14	2.32	3.39	0.93	0.73

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
Nov. 1	....	0.004	....	....	0.020	....	0.000	....	0.003	....	0.003	....	0.000	....	....	....	....	....	....
2	....	0.004	....	....	0.020	....	0.000	....	0.003	....	0.003	....	0.000	....	....	....	....	....	....
3	....	0.004	....	....	0.020	....	0.000	....	0.003	....	0.003	....	0.000	....	....	....	....	....	....
4	....	0.004	....	....	0.020	....	0.000	....	0.003	....	0.003	....	0.000	....	....	....	....	....	....
5	....	0.004	....	....	0.020	....	0.000	....	0.003	....	0.003	....	0.000	....	....	....	....	....	....
6	....	0.007	....	....	0.020	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
7	....	0.004	....	....	0.018	....	0.000	....	0.003	....	0.002	....	0.000	T	....	T	T	....	....
8	....	0.004	....	....	0.018	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
9	....	0.004	....	....	0.018	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
10	....	0.004	....	....	0.018	....	0.000	0.08	0.003	0.19	0.002	....	0.000	T	....	T	0.05	....	....
11	0.72	0.007	0.74	0.78	0.023	0.50	0.000	....	0.003	0.04	0.002	0.43	0.000	0.50	0.36	0.64	0.70	0.11	0.09
12	....	0.012	....	....	0.031	....	0.000	0.59	0.003	0.15	0.002	0.04	0.000	0.29	....	....	....	....	0.40
13	0.25	0.009	0.29	0.29	0.028	0.22	0.000	0.10	0.006	0.32	0.002	0.32	0.000	....	0.70	0.53	0.17	0.40	0.41
14	....	0.009	....	....	0.026	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
15	....	0.008	....	....	0.023	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
16	....	0.004	....	....	0.020	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
17	....	0.004	....	....	0.018	....	0.000	....	0.006	....	0.002	....	0.000	....	T	T	T	T	T
18	....	0.004	....	....	0.015	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	T	....
19	....	0.004	....	....	0.015	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
20	0.02	0.004	....	....	0.015	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
21	....	0.004	0.04	0.04	0.015	0.10	0.000	....	0.003	....	0.002	0.02	0.000	0.02	....	0.10	....	0.06	0.02
22	....	0.004	....	....	0.015	....	0.000	....	0.003	....	0.002	....	0.000	....	0.07	....	....	....	....
23	....	0.004	....	....	0.015	....	0.000	....	0.003	....	0.002	....	0.000	T	....	0.08	....	....	0.01
24	....	0.004	....	....	0.015	....	0.000	....	0.003	....	0.002	0.02	0.000	0.02	....	....	T	T	0.01
25	....	0.004	....	....	0.015	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
26	....	0.004	....	....	0.015	....	0.000	0.03	0.003	0.06	0.002	....	0.000	....	....	....	....	....	....
27	0.05	0.004	....	....	0.015	....	0.000	....	0.003	....	0.002	....	0.000	....	T	0.02	....	T	T
28	0.01	0.004	0.01	....	0.015	....	0.000	....	0.003	....	0.002	....	0.000	....	....	0.02	T	....	T
29	0.02	0.004	....	0.02	0.013	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	T	0.04	T
30	....	0.002	....	....	0.013	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
Total	1.07	0.15	1.08	1.13	0.55	0.82	0.00	0.80	0.12	0.76	0.06	0.83	0.00	0.83	1.13	1.39	0.92	0.61	0.94

Rainfall and Run-Off Data

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1924																			
Dec. 1	....	0.003	....	....	0.013	....	0.000	....	0.006	....	0.002	....	0.000	....	....	....	....	....	....
2	....	0.004	....	....	0.013	....	0.000	....	0.006	....	0.002	....	0.000	....	....	T	....	....	....
3	0.13	0.004	0.33	0.36	0.013	0.29	0.000	0.59	0.008	0.34	0.002	0.22	0.000	0.13	0.22	0.20	0.14	T	0.11
4	0.42	0.004	0.47	0.46	0.013	0.59	0.000	....	0.010	0.16	0.002	0.48	0.000	0.38	0.18	0.56	0.15	T	0.30
5	0.52	0.011	0.43	0.42	0.013	0.30	0.000	0.03	0.012	0.10	0.002	0.21	0.000	0.41	0.55	0.18	0.60	1.01	0.65
6	0.03	0.013	....	....	0.013	....	0.000	....	0.013	....	0.002	....	0.000	....	....	....	....	....	....
7	0.67	0.013	1.05	1.00	0.015	0.75	0.000	0.91	0.048	1.14	0.008	1.04	0.000	0.12	....	0.40	T	0.02	....
8	....	0.058	....	....	0.048	....	0.017	....	0.042	....	0.073	....	0.123	0.92	1.60	0.06	0.52	1.00	1.01
9	....	0.040	....	....	0.045	....	0.014	....	0.032	....	0.081	....	0.077	T	....	....	....	....	....
10	....	0.029	....	....	0.042	....	0.007	....	0.029	....	0.056	....	0.043	....	....	....	....	....	....
11	....	0.025	....	....	0.037	....	0.006	....	0.026	....	0.043	....	0.019	....	....	....	....	....	....
12	....	0.020	....	....	0.031	....	0.005	....	0.019	....	0.031	....	0.000	T	....	....	....	T	....
13	....	0.017	....	....	0.028	....	0.004	....	0.016	....	0.029	....	0.000	....	....	....	....	....	....
14	0.06	0.015	0.09	0.10	0.023	0.08	0.002	0.04	0.013	0.03	0.023	0.12	0.000	0.12	0.18	0.13	0.08	T	0.03
15	....	0.014	....	....	0.020	....	0.002	....	0.010	....	0.020	....	0.000	T	....	....	....	T	....
16	....	0.013	....	....	0.020	....	0.001	0.85	0.006	0.38	0.019	....	0.000	T	....	....	0.50	T	....
17	1.97	0.092	1.92	1.89	0.105	2.10	0.063	0.99	0.006	1.57	0.056	1.98	0.096	1.54	1.10	1.46	1.50	0.92	1.26
18	2.45	0.222	2.08	2.15	0.316	2.49	0.367	1.97	0.200	1.90	0.184	1.94	0.250	1.94	2.05	2.40	3.00	0.60	2.11
19	....	0.440	....	....	0.457	....	0.384	....	0.181	....	0.313	....	0.368	0.41	0.72	0.23	T	....	0.32
20	....	0.226	....	....	0.240	....	0.185	....	0.113	....	0.306	....	0.126	....	....	....	....	....	T
21	0.02	0.150	0.14	0.14	0.145	0.03	0.112	....	0.113	0.02	0.269	....	0.094	....	....	....	....	....	....
22	....	0.128	....	....	0.111	....	0.082	....	0.087	....	0.169	....	0.077	T	....	....	....	....	T
23	0.11	0.116	0.04	0.04	0.099	0.10	0.060	0.03	0.074	0.06	0.122	0.16	0.063	0.14	0.22	0.18	0.28	0.05	0.15
24	....	0.080	....	....	0.079	....	0.044	....	0.061	0.03	0.090	....	0.049	0.02	....	0.05	....	0.30	T
25	....	0.069	....	....	0.064	....	0.032	....	0.052	....	0.071	....	0.035	....	....	....	....	....	....
26	....	0.066	....	....	0.055	....	0.026	....	0.042	....	0.061	....	0.033	....	....	....	....	....	....
27	....	0.061	....	....	0.055	....	0.019	....	0.032	....	0.050	....	0.033	....	....	T	....	....	....
28	....	0.058	....	....	0.055	....	0.015	....	0.026	....	0.045	....	0.033	....	....	....	....	....	....
29	....	0.051	....	....	0.055	....	0.015	....	0.023	....	0.038	....	0.033	....	....	....	....	....	T
30	....	0.040	....	....	0.058	....	0.014	....	0.023	....	0.034	....	0.033	....	....	....	....	....	....
31	....	0.034	....	....	0.055	....	0.010	....	0.023	....	0.028	....	0.033	....	....	....	....	....	....
Total	6.38	2.12	6.55	6.56	2.34	6.73	1.49	5.41	1.35	5.73	2.23	6.15	1.62	6.13	6.82	5.85	6.77	3.90	5.94

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Jan. 1	0.38	0.030	0.40	0.39	0.052	0.43	0.006	0.38	0.019	0.53	0.026	0.37	0.033	0.35	0.59	0.23	0.25	0.50	0.24
2	....	0.028	....	....	0.048	....	0.006	....	0.016	....	0.025	....	0.033	....	....	....	....	....	....
3	....	0.026	....	....	0.042	....	0.006	....	0.016	....	0.022	....	0.033	....	....	....	....	....	....
4	....	0.026	....	....	0.042	....	0.005	....	0.013	....	0.021	....	0.033	....	....	....	....	....	....
5	....	0.025	....	....	0.040	....	0.005	....	0.012	....	0.019	....	0.033	....	....	....	....	....	....
6	....	0.024	....	....	0.037	....	0.004	....	0.010	....	0.019	....	0.033	....	....	....	....	....	....
7	....	0.022	....	....	0.037	....	0.004	0.04	0.008	0.02	0.016	....	0.033	....	....	....	....	....	....
8	....	0.024	....	....	0.034	....	0.002	....	0.006	....	0.015	....	0.033	....	....	....	....	....	....
9	....	0.022	....	....	0.031	....	0.002	....	0.006	....	0.015	....	0.033	....	....	....	....	....	....
10	....	0.020	....	....	0.031	....	0.002	....	0.006	....	0.015	....	0.033	....	....	T	....	....	....
11	....	0.020	....	....	0.028	....	0.002	....	0.004	....	0.015	....	0.023	....	....	....	....	....	....
12	0.09	0.021	0.14	0.14	0.028	0.20	0.001	0.21	0.006	0.03	0.014	0.07	0.012	0.09	0.14	0.16	0.10	0.10	0.05
13	....	0.012	....	....	0.031	....	0.001	0.10	0.008	0.25	0.014	....	0.012	....	....	....	0.04	T	....
14	....	0.020	....	....	0.026	....	0.001	....	0.006	0.08	0.014	0.08	0.008	....	....	....	....	....	....
15	....	0.020	....	....	0.026	0.05	0.000	....	0.008	....	0.014	....	0.005	....	....	....	....	....	....
16	0.05	0.017	0.03	0.02	0.028	0.02	0.000	....	0.013	....	0.014	0.11	0.005	0.14	....	0.17	0.09	T	T
17	....	0.021	....	....	0.028	....	0.000	....	0.014	....	0.014	....	0.005	....	....	....	....	....	....
18	....	0.020	....	....	0.028	....	0.000	....	0.013	....	0.014	....	0.012	....	....	....	....	....	....
19	....	0.017	....	0.02	0.028	0.03	0.000	....	0.013	....	0.014	....	0.014	T	T	T	....	....	....
20	0.11	0.016	0.03	0.04	0.028	0.15	0.000	0.12	0.008	0.01	0.014	0.12	0.031	0.15	....	....	....	....	....
21	....	0.019	....	..	0.026	....	0.000	....	0.009	....	0.014	....	0.033	....	....	....	....	....	....
22	....	0.026	....	....	0.026	....	0.000	....	0.013	....	0.014	....	0.026	....	....	....	....	....	....
23	....	0.014	....	....	0.026	....	0.000	....	0.013	....	0.014	....	0.026	....	....	....	....	....	....
24	....	0.022	....	....	0.031	....	0.000	....	0.016	....	0.014	....	0.026	....	....	....	....	....	....
25	....	0.020	....	....	0.026	....	0.001	....	0.016	....	0.038	....	0.026	....	....	....	....	....	....
26	....	0.020	....	....	0.026	....	0.005	....	0.032	....	0.024	....	0.026	T	....	T	....	T	T
27	....	0.016	....	....	0.026	....	0.005	....	0.026	....	0.015	....	0.026	....	....	....	....	T	....
28	....	0.014	....	....	0.026	....	0.000	....	0.023	....	0.014	....	0.026	....	....	....	....	....	....
29	....	0.014	....	....	0.026	....	0.000	....	0.021	....	0.014	....	0.026	....	....	....	....	....	....
30	....	0.011	....	....	0.028	....	0.000	....	0.019	....	0.014	....	0.026	....	....	....	....	....	....
31	....	0.026	....	....	0.028	....	0.000	....	0.014	....	0.014	....	0.026	....	T	....	....	....	....
Total	0.63	0.63	0.60	0.61	0.97	0.88	0.06	0.85	0.42	0.92	0.52	0.75	0.75	0.73	0.73	0.56	0.48	0.60	0.29

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Feb. 1	....	0.070	....	....	0.034	....	0.000	....	0.016	....	0.014	....	0.026	....	....	....	....	T	....
2	....	0.035	....	....	0.052	....	0.000	....	0.014	....	0.015	....	0.026	T	....	....	....	....	....
3	....	0.025	....	....	0.052	....	0.000	....	0.018	....	0.019	....	0.026	....	....	....	....	....	....
4	....	0.024	....	....	0.052	....	0.000	....	0.024	....	0.015	....	0.026	....	....	....	....	....	....
5	....	0.102	....	....	0.061	....	0.001	....	0.052	....	0.060	....	0.035	....	....	....	....	....	....
6	....	0.110	....	....	0.064	....	0.001	....	0.032	....	0.090	....	0.037	....	....	....	....	....	....
7	....	0.102	....	....	0.089	....	0.054	....	0.029	....	0.099	....	0.041	....	....	....	....	....	....
8	0.34	0.102	0.58	0.55	0.070	0.60	0.056	0.49	0.074	0.18	0.104	0.73	0.052	0.36	....	0.15	....	0.03	....
9	....	0.198	....	....	0.045	....	0.112	....	0.113	....	0.141	....	0.123	0.40	0.45	0.38	0.80	0.70	T
10	....	0.142	....	....	0.040	0.03	0.078	0.04	0.087	0.04	0.145	0.08	0.086	....	....	0.20	0.18	T	....
11	0.02	0.110	0.02	....	0.040	....	0.051	....	0.058	....	0.107	....	0.065	0.07	0.19	0.22	0.06	0.05	T
12	....	0.084	....	....	0.052	....	0.036	....	0.052	....	0.080	....	0.059	....	....	....	....	....	....
13	....	0.067	....	....	0.052	....	0.026	....	0.048	....	0.061	....	0.049	....	....	....	....	....	....
14	....	0.061	....	....	0.052	....	0.019	....	0.029	....	0.055	....	0.043	....	....	....	....	....	....
15	....	0.054	....	....	0.079	....	0.015	0.11	0.036	0.30	0.047	....	0.037	....	....	....	....	....	....
16	....	0.045	....	....	0.058	....	0.014	....	0.032	....	0.042	....	0.029	....	....	....	....	....	....
17	....	0.042	....	....	0.064	....	0.012	....	0.030	....	0.034	....	0.026	T	....	T	....	....	T
18	....	0.040	....	....	0.073	....	0.010	....	0.029	....	0.032	....	0.023	....	....	....	....	....	....
19	....	0.038	....	....	0.061	....	0.007	....	0.029	....	0.030	....	0.023	....	....	....	....	....	....
20	0.22	0.033	0.28	0.28	0.052	0.21	0.007	0.08	0.030	0.30	0.029	0.27	0.023	....	....	....	....	....	....
21	....	0.037	0.10	0.1	0.040	0.06	0.007	0.52	0.036	0.15	0.032	0.06	0.041	0.25	0.16	0.30	....	0.33	0.34
22	0.35	0.047	0.09	0.08	0.045	0.07	0.014	....	0.032	0.15	0.050	0.06	0.049	0.05	0.33	0.33	0.40	0.02	0.06
23	....	0.068	....	....	0.052	0.13	0.026	....	0.032	....	0.064	0.13	0.097	0.15	0.17	0.10	0.20	T	0.10
24	....	0.076	....	....	0.042	....	0.032	....	0.052	....	0.073	....	0.080	....	....	....	....	....	T
25	....	0.071	....	....	0.042	....	0.030	....	0.068	....	0.069	....	0.052	....	....	....	....	....	....
26	....	0.064	....	....	0.070	....	0.024	....	0.042	....	0.055	....	0.039	....	....	....	....	T	T
27	....	0.061	....	....	0.052	....	0.017	....	0.039	....	0.047	....	0.026	....	....	....	....	....	....
28	0.16	0.055	0.31	0.32	0.052	0.13	0.015	0.11	0.032	0.11	0.040	0.07	0.026	0.07	....	0.11	....	....	....
Total	1.09	1.96	1.38	1.34	1.53	1.23	0.66	1.35	1.18	1.53	1.65	1.40	1.26	1.35	1.30	1.79	1.64	1.13	0.50

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Mar. 1	0.04	0.047	0.03	0.02	0.048	0.07	0.014	0.07	0.029	0.02	0.035	0.10	0.026	0.10	0.29	0.13	0.15	0.18	0.18
2	....	0.042	....	....	0.048	....	0.012	....	0.026	....	0.029	....	0.026	....	....	....	....	....	....
3	....	0.039	....	....	0.045	....	0.012	....	0.052	....	0.027	....	0.026	....	....	....	....	....	....
4	....	0.035	....	....	0.045	....	0.010	....	0.032	....	0.024	....	0.026	....	....	....	....	....	....
5	....	0.031	....	....	0.042	....	0.007	....	0.026	....	0.021	....	0.026	....	....	....	....	....	....
6	....	0.031	....	....	0.040	....	0.006	....	0.023	....	0.020	....	0.026	....	....	....	....	....	....
7	....	0.031	....	....	0.037	....	0.006	....	0.021	....	0.023	....	0.026	....	....	....	....	....	....
8	....	0.031	....	....	0.031	....	0.005	....	0.021	....	0.023	....	0.026	....	....	....	....	....	....
9	....	0.029	....	....	0.028	....	0.005	....	0.021	....	0.023	....	0.026	....	....	....	....	....	....
10	....	0.026	0.03	0.02	0.026	0.03	0.005	0.02	0.019	....	0.023	0.03	0.026	0.04	0.22	....	T	T	0.10
11	....	0.026	....	....	0.023	....	0.004	....	0.019	....	0.019	....	0.026	T	....	T	T	....	T
12	....	0.025	....	....	0.018	....	0.004	....	0.018	....	0.019	....	0.026	....	....	....	....	....	....
13	2.24	0.072	2.72	2.66	0.105	2.24	0.062	2.64	0.059	2.33	0.042	2.60	0.070	2.51	1.85	1.80	1.60	1.41	1.95
14	....	0.293	....	....	0.278	....	0.185	....	0.212	....	0.218	....	0.217	0.17	0.58	0.06	0.15	0.06	0.58
15	....	0.190	....	....	0.167	....	0.122	....	0.155	....	0.200	....	0.133	....	....	....	....	....	....
16	....	0.152	....	....	0.130	....	0.098	....	0.107	....	0.171	....	0.097	....	....	....	....	....	....
17	....	0.128	....	....	0.117	....	0.078	....	0.082	....	0.146	....	0.089	....	....	....	....	....	....
18	1.20	0.144	1.44	1.38	0.154	1.23	0.095	1.52	0.094	1.39	0.127	1.48	0.116	1.47	1.90	1.12	0.85	1.12	1.70
19	....	0.250	....	....	0.315	....	0.175	....	0.280	....	0.253	0.02	0.185	0.05	0.22	0.03	0.35	0.12	0.04
20	....	0.181	....	....	0.232	....	0.131	....	0.207	....	0.233	....	0.114	....	....	....	....	T	0.03
21	....	0.144	....	....	0.148	0.01	0.095	....	0.134	....	0.191	....	0.086	....	....	....	....	....	....
22	....	0.112	....	....	0.102	....	0.078	....	0.087	....	0.153	....	0.086	....	....	0.01	....	....	....
23	....	0.095	....	....	0.093	....	0.063	....	0.074	....	0.120	....	0.086	....	....	....	....	....	....
24	0.23	0.084	0.26	0.25	0.076	0.26	0.054	0.03	0.061	0.13	0.102	0.18	0.082	0.18	0.23	0.15	0.10	0.05	....
25	....	0.076	....	....	0.067	....	0.048	....	0.056	....	0.084	....	0.067	T	0.16	....	0.04	....	0.28
26	0.05	0.071	0.01	0.02	0.070	0.06	0.044	0.08	0.052	0.20	0.084	0.04	0.061	0.03	....	0.34	....	T	0.13
27	....	0.064	....	....	0.058	....	0.039	....	0.048	....	0.063	....	0.052	T	....	....	....	T	....
28	....	0.058	....	....	0.058	....	0.036	....	0.042	....	0.058	....	0.043	....	....	....	....	....	....
29	....	0.056	....	....	0.052	....	0.032	....	0.040	....	0.050	....	0.014	....	....	....	....	....	....
30	....	0.045	....	....	0.052	....	0.027	....	0.039	....	0.044	....	0.008	....	....	....	....	....	....
31	....	0.042	....	....	0.048	....	0.026	....	0.036	....	0.040	....	0.008	....	....	....	....	....	....
Total	3.76	2.65	4.49	4.35	2.75	3.90	1.58	4.36	2.17	4.07	2.67	4.45	1.92	4.55	5.45	3.64	3.24	2.94	4.99

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Apr. 1	....	0.042	....	....	0.045	....	0.019	....	0.032	....	0.035	....	0.003	....	....	....	....	....	....
2	....	0.039	....	....	0.045	....	0.015	....	0.030	....	0.032	....	0.000	....	....	....	....	....	....
3	....	0.037	....	....	0.045	....	0.015	....	0.029	....	0.031	....	0.000	....	....	....	....	....	....
4	....	0.033	....	....	0.045	....	0.012	....	0.028	....	0.029	....	0.000	....	....	....	....	....	....
5	....	0.028	....	....	0.042	....	0.012	....	0.028	....	0.026	....	0.000	....	....	....	....	....	....
6	....	0.026	....	....	0.042	....	0.012	....	0.028	....	0.024	....	0.000	....	....	....	....	....	....
7	....	0.031	....	....	0.040	....	0.012	....	0.026	....	0.024	....	0.000	....	....	....	....	....	....
8	....	0.029	....	....	0.040	....	0.012	....	0.026	....	0.023	....	0.000	0.08	0.30	0.15	0.70	0.58	0.34
9	0.85	0.026	0.85	0.88	0.040	0.72	0.010	0.18	0.024	0.64	0.023	0.65	0.000	0.60	0.52	0.60	0.10	0.07	0.20
10	....	0.030	....	....	0.040	....	0.010	....	0.023	....	0.023	....	0.000	T	....	....	....	0.25	....
11	0.10	0.033	....	....	0.037	....	0.010	0.23	0.023	0.03	0.021	....	0.000	0.05	....	....	T	....	0.15
12	....	0.031	....	....	0.037	....	0.010	....	0.021	0.09	0.021	0.11	0.000	....	0.75	....	0.60	0.05	0.28
13	0.17	0.030	0.28	0.26	0.037	0.18	0.010	....	0.021	0.02	0.020	0.24	0.000	0.27	0.08	0.01	0.05	T	....
14	....	0.029	....	....	0.034	....	0.010	....	0.019	....	0.020	....	0.000	....	....	0.15	....	....	....
15	....	0.026	....	....	0.034	....	0.010	....	0.019	....	0.019	....	0.000	....	....	....	....	....	....
16	....	0.025	....	....	0.034	....	0.010	....	0.018	....	0.018	....	0.000	....	....	....	....	....	....
17	0.04	0.026	0.12	0.09	0.034	0.10	0.010	0.32	0.018	0.43	0.016	0.13	0.000	0.05	0.12	0.10	....	T	0.04
18	0.03	0.026	....	....	0.034	....	0.015	....	0.018	....	0.016	....	0.000	0.05	....	....	....	....	....
19	....	0.025	....	....	0.034	....	0.015	....	0.018	....	0.016	....	0.000	....	....	....	....	T	....
20	....	0.022	....	....	0.054	....	0.010	....	0.016	....	0.016	....	0.000	....	....	....	....	....	....
21	0.18	0.024	0.27	0.18	0.034	0.24	0.015	0.31	0.018	0.29	0.016	0.32	0.000	....	0.85	....	0.70	0.40	0.19
22	....	0.022	....	....	0.034	....	0.015	....	0.018	....	0.015	....	0.000	0.32	....	0.34	....	....	....
23	....	0.020	....	....	0.037	....	0.015	....	0.018	....	0.015	....	0.000	....	....	....	....	....	....
24	....	0.017	....	....	0.037	....	0.015	....	0.018	....	0.015	....	0.000	....	0.05	....	....	....	....
25	0.11	0.017	0.19	0.31	0.034	0.19	0.015	0.05	0.018	0.15	0.014	0.13	0.000	0.15	....	0.20	0.12	....	0.03
26	....	0.017	....	....	0.031	....	0.015	....	0.014	....	0.013	....	0.000	....	....	....	....	....	....
27	....	0.017	....	....	0.031	....	0.017	....	0.013	....	0.012	....	0.000	T	T	0.05	....	....	0.01
28	....	0.017	....	....	0.031	....	0.017	....	0.013	0.06	0.012	....	0.000	....	....	....	....	....	....
29	0.17	0.017	0.29	0.28	0.031	0.28	0.017	0.19	0.014	0.14	0.012	0.26	0.000	0.16	0.36	0.20	0.40	0.20	0.34
30	....	0.015	....	....	0.026	....	0.015	0.08	0.013	0.02	0.012	0.04	0.000	0.13	....	0.18	0.05	....	0.06
Total	1.65	0.78	2.00	2.00	1.10	1.71	0.40	1.36	0.62	1.87	0.58	1.88	0.00	1.86	3.03	1.98	2.72	1.55	1.64

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
May 1	....	0.010	....	....	0.026	....	0.015	0.04	0.013	0.02	0.008	....	0.000	....	0.20	0.03	....	T	T
2	0.07	0.010	....	....	0.028	....	0.015	....	0.013	....	0.008	....	0.000	T	....	....	....	....	....
3	....	0.010	0.02	0.03	0.034	....	0.015	....	0.013	....	0.008	0.02	0.000	0.02	....	0.02	....	....	0.01
4	0.06	0.011	....	0.01	0.026	0.03	0.014	0.04	0.013	0.05	0.008	....	0.000	....	....	....	....	T	0.11
5	....	0.010	....	....	0.018	....	0.012	....	0.012	0.03	0.008	....	0.000	T	....	T	....	....	....
6	....	0.010	....	....	0.018	....	0.012	....	0.012	....	0.008	....	0.000	T	....	....	....	....	0.01
7	0.04	0.010	....	....	0.018	....	0.012	....	0.012	....	0.008	....	0.000	....	....	....	....	....	....
8	....	0.010	0.04	0.04	0.018	0.04	0.012	0.10	0.012	0.07	0.008	....	0.000	....	....	....	....	....	....
9	0.03	0.010	....	....	0.015	....	0.012	....	0.012	....	0.008	0.03	0.000	0.04	....	0.06	....	....	0.13
10	....	0.010	....	....	0.018	....	0.012	....	0.012	....	0.008	....	0.000	T	....	....	....	....	....
11	....	0.009	....	....	0.020	....	0.010	....	0.012	....	0.008	....	0.000	T	....	....	....	....	....
12	....	0.008	....	....	0.023	....	0.010	....	0.012	....	0.007	....	0.000	....	....	....	....	....	....
13	....	0.008	....	....	0.023	....	0.010	....	0.012	....	0.007	....	0.000	....	....	....	....	....	....
14	....	0.008	....	....	0.023	....	0.010	....	0.010	....	0.006	....	0.000	....	....	....	....	....	....
15	....	0.007	....	....	0.023	....	0.010	....	0.010	....	0.005	....	0.000	....	....	....	....	T	....
16	0.13	0.008	0.16	0.16	0.020	0.20	0.010	0.05	0.010	0.20	0.005	0.18	0.000	....	....	0.10	....	0.25	0.64
17	....	0.008	....	....	0.020	....	0.007	....	0.010	....	0.005	....	0.000	0.16	0.28	0.05	....	0.05	0.02
18	....	0.007	....	....	0.020	....	0.007	....	0.010	....	0.005	....	0.000	....	....	....	....	....	....
19	....	0.006	....	....	0.020	....	0.007	....	0.008	....	0.005	....	0.000	....	....	....	....	....	....
20	0.01	0.006	....	....	0.020	0.02	0.007	0.04	0.008	....	0.005	....	0.000	....	....	....	0.16	....	T
21	....	0.006	....	....	0.018	....	0.010	....	0.006	....	0.005	....	0.000	T	....	0.13	....	....	....
22	....	0.006	....	....	0.018	....	0.010	0.01	0.006	0.04	0.005	....	0.000	....	....	....	....	....	....
23	....	0.006	....	....	0.018	0.01	0.010	....	0.006	....	0.005	....	0.000	....	....	....	....	....	....
24	....	0.006	....	....	0.018	0.01	0.007	....	0.006	....	0.004	....	0.000	....	....	0.03	0.10	T	....
25	....	0.006	....	....	0.015	....	0.007	....	0.006	....	0.004	....	0.000	T	....	....	....	....	....
26	....	0.006	....	....	0.015	....	0.007	....	0.006	....	0.004	....	0.000	....	....	....	....	....	....
27	....	0.006	....	....	0.015	....	0.007	....	0.006	....	0.004	....	0.000	....	....	....	....	....	....
28	....	0.006	....	....	0.013	....	0.007	....	0.006	....	0.004	....	0.000	....	....	T	....	....	....
29	....	0.005	....	....	0.013	....	0.007	....	0.006	....	0.004	....	0.000	....	0.16	0.16	....	....	....
30	....	0.004	....	....	0.013	....	0.007	....	0.006	....	0.004	....	0.000	....	....	0.05	....	....	....
31	....	0.004	....	....	0.013	....	0.007	....	0.006	....	0.003	....	0.000	....	....	....	....	....	....
Total	0.34	0.24	0.22	0.24	0.60	0.31	0.31	0.28	0.29	0.41	0.18	0.23	0.00	0.22	0.64	0.63	0.26	0.30	0.92

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
June 1	....	0.004	....	....	0.013	....	0.006	....	0.000	....	0.003	....	0.000	....	....	....	....	....	....
2	....	0.004	....	....	0.010	....	0.005	....	0.000	....	0.002	....	0.000	T	....	....	0.04	....	T
3	....	0.004	....	....	0.010	....	0.004	....	0.000	....	0.002	....	0.000	....	....	0.03	....	....	....
4	....	0.003	....	....	0.010	....	0.002	....	0.000	....	0.002	....	0.000	....	....	....	....	....	....
5	....	0.002	....	....	0.010	....	0.001	....	0.000	....	0.002	....	0.000	....	....	....	....	....	....
6	....	0.002	....	....	0.010	....	0.001	....	0.000	....	0.002	....	0.000	....	0.03	....	0.05	T	....
7	0.31	0.002	0.43	0.42	0.008	0.19	0.000	....	0.000	0.03	0.002	0.38	0.000	0.44	T	0.10	....	T	T
8	....	0.002	....	....	0.008	....	0.000	....	0.000	....	0.002	....	0.000	....	T	....	T	T	....
9	....	0.002	....	....	0.006	....	0.000	....	0.000	....	0.002	....	0.000	....	....	....	....	....	....
10	....	0.002	....	....	0.006	....	0.000	....	0.000	....	0.002	....	0.000	....	....	....	....	....	....
11	....	0.002	....	....	0.006	....	0.000	....	0.000	....	0.002	....	0.000	....	....	....	....	....	....
12	....	0.002	....	....	0.006	....	0.000	0.08	0.000	0.16	0.001	0.10	0.000	....	0.08	....	T	0.03	....
13	0.57	0.002	0.70	0.70	0.006	0.68	0.000	....	0.000	0.05	0.001	0.56	0.000	0.62	0.78	0.66	0.85	1.08	0.52
14	....	0.002	....	....	0.006	0.25	0.000	0.45	0.000	0.15	0.001	0.09	0.000	....	T	....	....	....	....
15	0.26	0.002	0.49	0.56	0.006	0.26	0.000	0.40	0.000	0.24	0.001	....	0.000	0.04	0.67	0.12	0.50	T	0.42
16	0.51	0.004	....	....	0.006	....	0.000	....	0.000	....	0.001	....	0.000	0.05	0.73	T	0.13	T	1.17
17	0.03	0.057	....	....	0.006	....	0.000	....	0.000	....	0.001	....	0.000	T	0.50	....	0.03	1.15	0.14
18	....	0.036	....	....	0.004	....	0.000	....	0.000	....	0.001	....	0.000	T	0.12	0.35	....	....	0.04
19	....	0.016	....	....	0.002	....	0.000	....	0.000	....	0.001	....	0.000	....	....	....	....	....	....
20	....	0.011	....	....	0.002	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
21	....	0.007	....	....	0.000	....	0.000	0.35	0.000	0.05	0.000	....	0.000	....	....	....	....	....	....
22	0.25	0.006	0.89	0.82	0.000	0.96	0.000	....	0.000	....	0.000	0.72	0.000	0.91	0.36	....	0.22	0.08	0.08
23	0.35	0.006	0.44	0.48	0.000	....	0.000	0.30	0.000	0.92	0.000	0.23	0.000	0.14	0.12	0.37	0.30	0.10	0.27
24	0.20	0.006	0.43	0.50	0.002	0.74	0.025	0.01	0.000	0.19	0.001	....	0.000	....	1.30	0.24	0.35	0.10	0.32
25	....	0.010	....	....	0.002	....	0.017	....	0.000	....	0.001	0.08	0.000	....	....	0.76	T	T	....
26	....	0.006	....	....	0.004	....	0.010	0.25	0.000	0.14	0.001	0.07	0.000	T	0.27	....	....	T	....
27	....	0.005	....	....	0.006	....	0.005	....	0.000	....	0.001	....	0.000	....	0.47	....	....	0.14	T
28	0.12	0.004	0.09	0.08	0.006	0.05	0.001	....	0.000	....	0.001	0.07	0.000	....	0.07	....	0.05	T	0.02
29	....	0.004	....	....	0.008	....	0.000	0.13	0.000	0.06	0.002	....	0.000	0.08	0.18	0.24	....	....	0.03
30	....	0.002	....	....	0.008	....	0.000	....	0.000	....	0.002	....	0.000	....	....	....	....	....	....
Total	2.60	0.22	3.47	3.56	0.18	3.13	0.08	1.97	0.00	1.99	0.04	2.30	0.00	2.28	5.68	2.87	2.52	2.68	3.01

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
July 1	....	0.002	....	....	0.001	....	0.000	....	0.000	....	0.001	....	0.000	....	....	....	....	....	....
2	....	0.002	....	....	0.000	....	0.000	....	0.000	....	0.001	....	0.000	....	....	....	....	....	....
3	0.03	0.002	....	....	0.000	....	0.000	....	0.000	....	0.001	....	0.000	....	0.12	....	....	....	0.30
4	0.26	0.002	0.43	0.44	0.000	0.49	0.000	0.23	0.000	0.33	0.001	0.34	0.000	0.33	0.62	0.80	0.35	0.12	0.82
5	....	0.002	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	0.06	....	....	....
6	0.10	0.002	0.03	0.05	0.000	0.06	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
7	0.07	0.002	0.36	0.31	0.000	0.32	0.000	0.29	0.000	0.56	0.000	0.34	0.000	0.34	0.37	0.62	0.60	0.22	0.17
8	0.04	0.002	0.06	0.06	0.000	0.14	0.000	0.34	0.000	0.05	0.000	0.22	0.000	0.25	....	....	....	1.36	0.13
9	0.05	0.002	0.02	....	0.000	0.06	0.000	0.34	0.000	0.21	0.000	0.08	0.000	0.05	....	....	0.53	0.11	....
10	0.02	0.002	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	T	0.42	0.20	....	....	0.08
11	0.10	0.002	....	....	0.000	0.38	0.000	0.06	0.000	0.23	0.000	....	0.000	....	....	....	....	....	0.04
12	....	0.002	0.10	0.14	0.000	....	0.000	....	0.000	....	0.000	0.06	0.000	0.01	0.14	....	....	2.38	0.32
13	....	0.002	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	0.38	....	....	0.01
14	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
15	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
16	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	T	....	0.20	T	T	....
17	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	T	....	....	....	....
18	....	0.000	....	....	0.000	....	0.000	0.30	0.000	0.04	0.000	....	0.000	....	T	....	T	T	....
19	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	0.14	....	0.03	....	T
20	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	T	....	....	....
21	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
22	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
23	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
24	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	0.02	....	....
25	....	0.001	....	....	0.000	0.08	0.000	0.10	0.000	0.28	0.000	0.02	0.000	....	T	....	....	0.45	0.03
26	....	0.000	....	....	0.000	....	0.000	0.02	0.000	0.06	0.000	....	0.000	....	....	T	....	....	....
27	....	0.001	0.03	0.03	0.000	0.04	0.000	0.03	0.000	0.01	0.000	0.02	0.000	0.02	0.03	....	0.31	T	....
28	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
29	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	T	....	....	....	....
30	0.09	0.000	0.17	0.17	0.000	0.18	0.000	0.03	0.000	0.10	0.000	0.10	0.000	0.12	0.18	0.18	0.28	0.07	0.10
31	0.02	0.001	0.05	0.05	0.000	0.06	0.000	0.01	0.000	0.05	0.000	0.04	0.000	0.02	T	0.10	0.16	0.12	0.01
Total	0.78	0.04	1.25	1.25	0.00	1.81	0.00	1.75	0.00	1.92	0.00	1.22	0.00	1.14	2.02	2.54	2.28	4.83	2.01

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Aug. 1	0.13	0.000	0.03	0.07	0.000	0.15	0.000	....	0.000	....	0.000	....	0.000	....	....	T	....	T	....
2	0.19	0.001	0.21	0.21	0.000	0.08	0.000	0.01	0.000	0.05	0.000	0.03	0.000	0.03	....	....	....	....	....
3	....	0.000	....	....	0.000	0.04	0.000	....	0.000	....	0.000	....	0.000	T	0.33	0.36	0.03	T	....
4	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	T	....	T	....
5	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	T	....	....	....	....
6	....	0.000	0.05	0.05	0.000	0.06	0.000	....	0.000	....	0.000	....	0.000	T	....	....	0.05	0.01	....
7	0.21	0.000	0.39	0.41	0.000	0.26	0.000	0.04	0.000	0.13	0.000	0.18	0.000	0.17	T	....	0.19	0.21	0.17
8	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	0.03	0.03	0.12	0.05	T	0.26
9	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	T	....
10	....	0.000	....	....	0.000	....	0.000	0.02	0.000	0.21	0.000	....	0.000	....	....	....	....	....	....
11	0.15	0.000	0.09	0.08	0.000	0.03	0.000	1.35	0.000	0.41	0.000	0.35	0.000	0.14	0.41	0.20	0.06	T	0.01
12	1.35	0.001	1.82	1.88	0.000	1.63	0.000	0.35	0.000	1.12	0.000	1.04	0.000	1.11	1.13	2.00	2.25	0.40	1.52
13	....	0.003	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	0.65	0.22	....	0.03	....
14	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	0.02	....
15	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
16	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
17	0.52	0.000	0.78	0.85	0.005	0.37	0.000	0.04	0.000	0.14	0.000	0.15	0.000	0.13	T	....	0.31	0.25	0.29
18	....	0.001	....	....	0.000	0.13	0.000	0.60	0.000	0.09	0.000	0.24	0.000	0.28	1.02	0.30	0.28	....	0.40
19	1.38	0.000	1.28	1.26	0.000	....	0.000	0.28	0.000	0.96	0.000	1.37	0.000	0.64	....	....	0.05	0.11	0.97
20	....	0.007	....	....	0.007	1.51	0.000	....	0.000	....	0.000	....	0.000	0.80	0.91	0.44	1.00	T	1.46
21	....	0.004	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	0.10	....	....	....
22	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
23	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
24	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
25	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
26	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
27	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
28	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
29	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
30	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
31	0.01	0.001	0.02	0.02	0.000	....	0.000	....	0.000	....	0.000	0.03	0.000	0.04	0.30	0.88	....	....	....
Total	3.94	0.02	4.67	4.83	0.01	4.26	0.00	2.69	0.00	3.11	0.00	3.39	0.00	3.42	4.78	4.62	4.27	1.03	5.08

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Sept. 1	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	0.02	....	....	....
2	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
3	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
4	....	0.001	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
5	....	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	T	....
6	0.03	0.000	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	T	....	....	0.55	....
7	....	0.000	....	....	0.000	....	0.000	....	0.003	0.02	0.000	....	0.000	....	....	T	....	....	....
8	0.78	0.000	1.07	0.95	0.000	0.68	0.000	....	0.003	0.76	0.000	1.13	0.000	0.90	....	....	....	0.50	0.74
9	0.94	0.001	0.06	0.05	0.000	0.23	0.000	0.87	0.003	....	0.000	....	0.000	0.30	0.62	0.25	1.00	0.50	....
10	0.26	0.001	0.36	0.47	0.000	0.52	0.000	0.23	0.004	0.19	0.000	0.35	0.000	0.31	0.06	0.09	0.25	0.30	0.51
11	....	0.000	0.12	0.12	0.000	....	0.000	....	0.004	0.06	0.000	0.14	0.000	0.03	....	....	0.05	0.40	0.04
12	2.83	0.001	2.28	2.53	0.005	1.55	0.000	1.60	0.006	2.60	0.000	2.07	0.000	0.17	0.08	0.55	0.42	0.40	0.45
13	....	0.180	0.02	....	0.244	1.40	0.000	....	0.013	....	0.000	0.31	0.015	2.21	1.29	1.88	0.56	0.65	1.50
14	0.96	0.122	1.01	1.06	0.102	1.44	0.001	0.95	0.023	1.15	0.000	0.60	0.023	0.44	0.27	1.10	0.55	0.88	0.65
15	....	0.119	....	....	0.108	0.04	0.006	....	0.024	....	0.000	0.29	0.017	0.52	0.47	0.39	0.27	0.32	0.46
16	....	0.093	....	....	0.075	....	0.004	....	0.024	....	0.001	....	0.015	....	....	....	....	....	....
17	....	0.060	....	....	0.055	....	0.000	....	0.019	....	0.001	....	0.015	....	....	....	....	....	....
18	....	0.035	....	....	0.033	....	0.000	....	0.012	....	0.001	....	0.012	....	....	....	....	....	....
19	....	0.020	....	....	0.023	....	0.000	....	0.006	....	0.001	....	0.012	....	T	....	....	....	....
20	0.17	0.019	0.06	0.02	0.013	0.07	0.000	....	0.006	0.02	0.001	0.23	0.008	0.24	0.12	....	0.18	....	0.21
21	....	0.014	....	....	0.005	....	0.000	....	0.006	....	0.001	....	0.006	....	....	0.16	....	....	....
22	....	0.012	....	....	0.001	....	0.000	0.02	0.006	0.07	0.000	0.01	0.005	T	....	....	....	....	....
23	....	0.010	....	....	0.001	....	0.000	....	0.004	....	0.000	....	0.005	....	....	0.04	....	....	....
24	....	0.009	....	....	0.001	....	0.000	....	0.004	....	0.000	....	0.003	....	....	....	....	....	....
25	....	0.006	....	....	0.001	....	0.000	....	0.004	....	0.000	....	0.000	T	T	....	....	T	....
26	0.26	0.006	0.22	0.24	0.000	0.43	0.000	0.10	0.004	0.29	0.000	0.13	0.000	0.03	0.38	T	....	0.26	0.33
27	0.09	0.006	0.03	0.05	0.000	....	0.000	....	0.004	....	0.000	....	0.000	0.10	....	0.92	0.92	0.03	0.53
28	....	0.006	....	....	0.000	....	0.000	....	0.006	....	0.000	....	0.000	T	....	....	....	....	....
29	....	0.006	....	....	0.000	....	0.000	....	0.006	....	0.000	....	0.000	....	....	....	....	....	....
30	0.48	0.007	0.17	0.25	0.000	0.35	0.000	1.03	0.006	0.54	0.000	0.44	0.000	0.44	0.10	....	1.12	0.30	0.16
Total	6.80	0.74	5.40	5.74	0.67	6.71	0.01	4.80	0.20	5.70	0.01	5.70	0.14	5.69	3.39	5.40	5.32	5.09	5.58

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Oct. 1	0.18	0.015	0.11	....	0.000	0.13	0.000	0.02	0.000	0.06	0.000	0.68	0.000	0.03	0.06	0.65	....	....	....
2	....	0.011	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	0.76	....	0.10	....	....	0.18
3	0.50	0.023	0.97	0.80	0.038	0.57	0.000	0.25	0.001	0.82	0.002	1.26	0.004	1.32	....	0.24	2.71	0.33	0.51
4	....	0.022	....	....	0.061	....	0.039	....	0.010	....	0.009	....	0.033	0.02	0.28	....	....	....	0.06
5	....	0.015	....	....	0.035	....	0.070	....	0.027	....	0.014	....	0.028	....	....	....	....	....	....
6	0.52	0.013	0.44	0.44	0.030	0.45	0.042	0.06	0.023	0.19	0.011	0.42	0.026	0.41	0.24	0.38	....	0.30	0.33
7	....	0.013	....	....	0.030	....	0.019	....	0.016	....	0.009	....	0.026	....	....	....	....	....	....
8	....	0.011	....	....	0.025	....	0.014	0.07	0.016	....	0.008	....	0.028	T	....	....	....	....	....
9	0.30	0.010	0.19	0.20	0.023	0.13	0.010	0.10	0.013	0.31	0.006	0.19	0.026	0.19	0.38	0.07	0.08	0.80	0.10
10	....	0.010	....	....	0.020	....	0.006	....	0.010	....	0.005	....	0.012	....	....	....	....	....	....
11	....	0.010	....	....	0.023	....	0.005	....	0.010	....	0.005	0.07	0.006	T	....	....	....	....	....
12	0.07	0.010	0.15	0.15	0.015	0.14	0.002	0.08	0.006	0.04	0.004	0.06	0.003	0.14	0.10	0.12	0.12	....	0.12
13	....	0.010	....	0.01	0.013	0.02	0.002	0.07	0.006	0.18	0.004	....	0.000	0.01	T	....	0.02	T	0.03
14	0.17	0.010	....	....	0.011	0.04	0.002	0.04	0.006	....	0.004	....	0.000	T	T	T	0.01	....	....
15	....	0.010	....	....	0.009	....	0.002	....	0.004	....	0.004	....	0.000	....	....	....	....	....	....
16	0.59	0.009	0.62	0.64	0.011	0.66	0.002	0.05	0.014	0.17	0.004	0.48	0.003	0.40	0.52	0.64	0.40	0.20	0.39
17	....	0.012	....	....	0.020	....	0.010	....	0.016	0.30	0.004	0.09	0.005	0.16	0.18	0.29	....	0.46	....
18	....	0.019	....	....	0.028	....	0.015	0.06	0.024	....	0.004	....	0.003	T	....	0.02	....	T	....
19	0.02	0.016	....	0.01	0.028	0.03	0.014	0.15	0.040	0.02	0.005	0.01	0.003	0.01	T	....	0.03	T	....
20	....	0.017	....	....	0.025	....	0.010	0.03	0.040	0.06	0.005	....	0.000	0.01	....	....	....	T	....
21	0.15	0.017	0.12	0.10	0.025	0.09	0.007	0.08	0.032	0.20	0.005	0.12	0.000	0.07	T	T	....	0.10	0.35
22	....	0.017	0.10	0.11	0.025	0.22	0.005	....	0.030	0.07	0.005	0.04	0.000	0.05	0.03	....	....	0.05	0.07
23	0.08	0.016	....	....	0.023	....	0.002	....	0.029	....	0.005	....	0.000	....	0.14	T	....	T	....
24	0.19	0.014	0.24	0.21	0.023	0.27	0.002	0.14	0.029	0.08	0.004	0.33	0.000	0.21	0.22	0.27	0.25	0.22	0.33
25	....	0.013	....	0.03	0.023	0.05	0.002	....	0.026	....	0.004	....	0.000	0.14	....	0.17	0.20	0.15	....
26	0.11	0.013	0.21	0.24	0.023	0.09	0.002	0.09	0.024	0.03	0.004	0.05	0.000	0.05	0.14	0.03	0.06	0.05	0.07
27	....	0.013	....	....	0.023	....	0.002	....	0.020	0.04	0.004	....	0.000	....	0.09	....	....	....	....
28	0.10	0.013	....	....	0.020	0.07	0.002	....	0.018	....	0.004	0.03	0.000	0.03	T	0.03	0.20	....	0.10
29	0.24	0.013	0.19	0.18	0.020	0.19	0.001	0.18	0.012	0.14	0.003	0.16	0.003	0.13	0.02	0.08	0.05	0.20	0.18
30	0.02	0.013	....	0.02	0.018	....	0.001	....	0.010	....	0.004	....	0.003	0.02	....	0.02	....	0.03	....
31	....	0.013	....	....	0.015	....	0.001	....	0.012	....	0.004	....	0.005	....	....	....	....	....	....
Total	3.24	0.42	3.34	3.14	0.68	3.15	0.28	1.47	0.53	2.71	0.15	3.99	0.22	4.16	2.40	3.11	4.13	2.89	2.82

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Nov. 1	....	0.013	....	....	0.013	....	0.000	....	0.008	....	0.003	....	0.005	....	....	....	....	....	....
2	....	0.013	....	....	0.013	....	0.000	....	0.006	....	0.003	....	0.003	....	....	....	....	....	....
3	....	0.013	....	....	0.018	....	0.000	....	0.006	....	0.003	....	0.000	....	....	....	....	....	....
4	....	0.013	....	....	0.020	....	0.000	....	0.006	....	0.003	....	0.000	T	....	T	....	T	....
5	0.04	0.013	0.02	0.02	0.020	0.12	0.000	....	0.008	0.02	0.002	0.05	0.000	0.05	....	....	....	0.06	....
6	....	0.011	....	....	0.020	....	0.000	....	0.010	....	0.002	....	0.000	....	....	....	....	....	....
7	1.46	0.050	1.38	1.37	0.061	1.27	0.015	1.57	0.016	1.50	0.005	1.34	0.019	1.32	1.56	1.40	1.15	1.22	1.50
8	0.02	0.112	....	....	0.075	....	0.082	....	0.044	....	0.035	....	0.063	T	....	....	....	....	....
9	....	0.076	....	....	0.058	....	0.056	0.03	0.061	0.06	0.046	....	0.059	....	....	....	....	....	....
10	....	0.056	....	....	0.052	....	0.044	....	0.048	....	0.039	....	0.037	....	T	....	....	....	....
11	....	0.053	....	....	0.049	....	0.036	....	0.042	....	0.030	....	0.029	....	....	....	....	....	....
12	0.44	0.054	0.71	0.71	0.061	0.42	0.036	0.54	0.038	0.40	0.028	0.73	0.029	0.65	0.90	0.40	0.50	0.38	0.66
13	0.14	0.108	0.02	0.05	0.075	....	0.051	....	0.036	....	0.030	....	0.029	0.08	....	....	....	0.12	0.13
14	....	0.102	....	....	0.066	0.16	0.048	0.14	0.034	0.34	0.035	....	0.035	0.01	0.10	0.06	0.10	....	0.08
15	0.45	0.079	0.39	0.35	0.058	0.21	0.044	....	0.036	....	0.035	0.48	0.049	0.43	0.48	0.25	0.28	0.36	T
16	....	0.072	....	....	0.055	0.02	0.044	0.03	0.036	0.06	0.035	....	0.049	0.02	0.03	0.03	T	T	....
17	....	0.069	....	....	0.055	....	0.044	....	0.039	....	0.039	....	0.047	....	....	....	....	T	....
18	0.04	0.079	0.05	0.04	0.055	0.05	0.044	....	0.040	0.02	0.036	0.03	0.041	0.03	....	0.02	0.12	T	0.57
19	....	0.061	....	....	0.055	....	0.042	....	0.040	....	0.035	....	0.041	....	0.06	....	....	T	....
20	....	0.053	....	....	0.052	....	0.036	....	0.036	....	0.031	....	0.037	....	....	....	....	....	....
21	....	0.053	....	....	0.049	....	0.032	....	0.034	....	0.030	....	0.037	....	....	....	....	....	....
22	....	0.045	....	....	0.046	....	0.030	....	0.030	....	0.028	....	0.031	....	T	....	....	T	....
23	....	0.042	....	....	0.043	....	0.027	....	0.029	....	0.024	....	0.028	....	....	....	....	....	....
24	....	0.039	....	....	0.043	....	0.026	0.02	0.029	0.06	0.023	....	0.023	....	....	....	....	....	....
25	....	0.035	....	....	0.038	....	0.022	....	0.028	....	0.021	....	0.015	....	....	....	....	....	....
26	0.09	0.031	0.09	0.11	0.035	0.16	0.019	....	0.024	0.03	0.019	0.12	0.012	0.05	....	0.10	0.05	T	0.02
27	....	0.029	....	....	0.035	....	0.017	....	0.023	....	0.016	....	0.012	0.06	0.20	0.10	....	....	0.03
28	....	0.026	....	....	0.030	....	0.014	....	0.023	....	0.015	....	0.012	....	....	....	....	....	....
29	0.09	0.026	0.15	0.15	0.030	0.11	0.014	0.05	0.019	0.02	0.014	0.10	0.012	0.11	....	T	T	0.20	0.08
30	....	0.026	....	....	0.028	....	0.014	0.02	0.018	....	0.014	....	0.012	T	....	....	....	0.02	....
Total	2.77	1.45	2.81	2.80	1.31	2.52	0.84	2.40	0.85	2.51	0.68	2.85	0.77	2.81	3.33	2.36	2.20	2.36	3.07

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1925																			
Dec. 1	....	0.025	....	....	0.028	....	0.012	....	0.018	....	0.014	....	0.012	....	....	....	....	....	....
2	....	0.025	....	....	0.028	....	0.012	....	0.016	....	0.013	....	0.012	....	....	....	....	....	....
3	....	0.025	....	....	0.030	....	0.012	0.17	0.016	....	0.012	....	0.012	T	0.12	....	T	....	....
4	0.53	0.058	1.02	1.02	0.061	0.93	0.027	0.11	0.023	1.02	0.022	0.97	0.015	0.95	0.40	0.74	1.00	0.45	0.85
5	0.03	0.089	0.01	....	0.086	....	0.070	....	0.058	....	0.069	0.03	0.071	0.03	0.03	0.22	0.75	0.02	0.08
6	0.02	0.072	....	....	0.066	0.03	0.054	0.04	0.058	0.06	0.063	....	0.069	T	....	0.03	0.05	T	0.06
7	....	0.061	....	....	0.058	....	0.042	....	0.045	....	0.050	....	0.049	T	....	T	0.03	0.02	0.01
8	....	0.053	....	....	0.052	....	0.039	....	0.039	....	0.044	....	0.041	....	....	....	....	....	....
9	0.42	0.053	....	....	0.046	....	0.039	....	0.038	....	0.040	....	0.037	....	....	....	....	....	....
10	....	0.047	....	....	0.043	....	0.032	....	0.036	....	0.035	....	0.033	....	....	....	....	....	....
11	....	0.047	....	....	0.043	....	0.032	....	0.034	....	0.034	....	0.029	....	....	....	....	....	....
12	....	0.042	....	....	0.043	....	0.027	....	0.032	....	0.031	....	0.029	....	....	....	....	....	....
13	....	0.037	....	....	0.040	....	0.026	....	0.029	....	0.028	....	0.024	....	....	....	....	....	....
14	....	0.033	....	....	0.035	....	0.022	....	0.028	....	0.025	....	0.014	....	....	....	....	....	....
15	....	0.031	....	....	0.033	....	0.022	....	0.026	....	0.024	....	0.012	T	....	T	0.01	T	0.01
16	....	0.031	....	....	0.028	....	0.022	....	0.026	....	0.022	....	0.012	....	....	....	....	....	....
17	....	0.028	....	....	0.023	....	0.019	0.05	0.023	0.15	0.020	....	0.012	T	....	....	T	T	....
18	....	0.026	....	....	0.023	....	0.017	....	0.023	....	0.019	....	0.012	....	....	T	....	T	....
19	....	0.026	....	....	0.023	....	0.015	0.03	0.023	....	0.019	....	0.012	....	....	....	....	....	....
20	0.07	0.026	0.13	0.13	0.023	0.19	0.015	....	0.023	0.07	0.019	0.08	0.012	0.09	0.16	0.06	0.22	T	....
21	0.06	0.025	0.12	0.12	0.023	0.08	0.015	....	0.023	....	0.019	0.13	0.012	0.12	0.06	0.20	0.05	0.03	0.20
22	....	0.022	....	....	0.023	....	0.012	....	0.019	....	0.016	....	0.012	T	....	T	....	....	....
23	....	0.022	....	....	0.018	....	0.012	....	0.019	....	0.020	....	0.012	T	....	....	....	....	....
24	....	0.022	....	....	0.028	....	0.012	....	0.019	....	0.017	....	0.012	....	....	....	....	....	....
25	....	0.022	....	....	0.030	0.01	0.010	....	0.019	....	0.015	....	0.012	T	....	....	....	T	....
26	....	0.022	....	....	0.030	....	0.007	....	0.018	....	0.020	....	0.012	T	....	....	T	T	....
27	....	0.020	....	....	0.030	....	0.006	....	0.016	....	0.015	....	0.012	....	....	....	....	....	....
28	....	0.022	....	....	0.025	....	0.005	....	0.016	....	0.015	....	0.012	....	....	....	....	....	....
29	....	0.022	....	....	0.015	....	0.005	....	0.018	....	0.016	....	0.012	....	....	....	....	....	....
30	....	0.022	....	....	0.013	....	0.005	....	0.000	....	0.019	....	0.012	....	....	....	....	....	....
31	....	0.022	....	....	0.013	....	0.005	....	0.023	....	0.015	....	0.008	....	....	....	....	....	....
Total	1.13	1.08	1.28	1.27	1.06	1.24	0.65	0.40	0.79	1.30	0.79	1.21	0.65	1.19	0.77	1.25	2.11	0.52	1.21

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1926																			
Jan. 1	....	0.023	....	....	0.015	....	0.004	....	0.029	....	0.015	....	0.005	T	....	....	....	....	....
2	0.08	0.017	0.08	....	0.015	....	0.004	0.87	0.029	0.06	0.014	0.43	0.008	0.50	....	....	....	....	....
3	0.48	0.017	0.52	0.61	0.052	0.59	0.014	....	0.036	0.51	0.018	0.10	0.043	0.03	0.70	0.53	....	0.36	0.45
4	....	0.031	....	....	0.063	....	0.030	....	0.052	....	0.031	....	0.049	T	0.04	0.04	....	T	0.04
5	....	0.029	....	....	0.035	....	0.024	....	0.039	....	0.030	....	0.045	....	....	....	....	....	....
6	....	0.025	....	....	0.023	....	0.015	....	0.038	....	0.022	....	0.037	....	....	....	....	....	....
7	0.04	0.017	0.03	....	0.020	....	0.007	....	0.032	....	0.015	0.15	0.023	0.17	....	....	....	T	....
8	0.11	0.022	0.14	0.16	0.020	0.12	0.007	0.06	0.029	0.18	0.020	0.02	0.015	T	0.40	0.10	....	T	0.22
9	....	0.014	....	....	0.018	....	0.005	....	0.029	....	0.023	....	0.014	....	0.05	T	....	T	0.05
10	0.01	0.016	....	....	0.018	....	0.005	....	0.028	....	0.014	0.03	0.010	0.03	....	....	....	....	....
11	....	0.014	....	....	0.018	....	0.005	0.03	0.028	0.03	0.010	....	0.008	T	....	0.03	....	T	0.16
12	0.02	0.019	....	....	0.015	0.02	0.002	....	0.023	....	0.015	0.01	0.005	0.01	....	T	....	....	....
13	....	0.015	....	....	0.013	....	0.002	0.01	0.019	0.06	0.011	....	0.005	....	....	0.06	....	....	....
14	....	0.015	....	....	0.013	....	0.001	....	0.016	....	0.010	....	0.005	....	....	....	....	....	....
15	....	0.015	....	....	0.013	....	0.001	....	0.016	....	0.010	....	0.000	....	T	....	....	....	....
16	....	0.014	....	....	0.013	....	0.000	0.01	0.019	0.03	0.009	0.07	0.000	0.08	....	....	....	T	....
17	0.33	0.025	0.17	0.04	0.028	0.11	0.002	0.09	0.020	0.32	0.009	0.84	0.019	0.85	0.08	0.03	....	T	0.10
18	0.48	0.171	0.60	0.70	0.185	0.51	0.221	0.05	0.164	0.15	0.075	....	0.201	....	....	0.64	....	0.62	1.25
19	....	0.119	....	....	0.055	0.26	0.085	0.03	0.080	....	0.096	....	0.100	....	....	....	....	....	....
20	....	0.092	0.11	0.13	0.040	....	0.054	....	0.058	....	0.072	0.02	0.071	0.02	T	0.05	....	0.02	....
21	0.06	0.064	....	....	0.040	....	0.042	....	0.045	0.01	0.055	....	0.067	....	0.18	0.15	....	0.06	....
22	....	0.061	....	....	0.033	....	0.032	....	0.039	....	0.046	....	0.049	....	....	....	....	....	....
23	....	0.053	....	....	0.028	....	0.019	....	0.029	....	0.038	....	0.045	....	....	....	....	....	....
24	0.02	0.037	0.02	....	0.020	0.01	0.010	....	0.023	0.04	0.029	0.10	0.035	0.12	....	....	....	....	....
25	0.02	0.022	....	....	0.018	0.02	0.006	0.04	0.019	0.03	0.020	0.04	0.029	0.04	T	0.04	....	....	0.02
26	0.10	0.020	0.07	0.07	0.015	0.06	0.005	....	0.016	....	0.018	0.04	0.012	0.02	0.06	0.06	....	0.13	T
27	....	0.020	0.05	0.05	0.015	0.02	0.004	....	0.013	0.07	0.018	....	0.012	....	T	T	....	0.06	T
28	....	0.016	....	....	0.013	....	0.001	....	0.013	....	0.018	....	0.012	....	....	....	....	....	....
29	....	0.014	....	....	0.013	....	0.000	0.01	0.013	0.03	0.018	....	0.012	....	....	....	....	....	....
30	....	0.019	....	....	0.018	....	0.000	....	0.016	....	0.018	....	0.010	....	....	....	T	....	....
31	....	0.026	0.05	0.05	0.038	0.08	0.000	0.02	0.023	0.04	0.018	0.02	0.012	T	T	0.15	....	....	....
Total	1.75	1.06	1.84	1.81	0.92	1.80	0.61	1.22	1.03	1.56	0.82	1.87	0.96	1.87	1.51	1.88	....*	1.25	2.29

*No record.

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1926																			
Feb. 1	0.01	0.022	....	....	0.040	....	0.000	0.08	0.023	0.19	0.018	....	0.041	T	....	0.05	....	T	....
2	0.08	0.022	0.06	0.07	0.028	0.08	0.000	....	0.023	....	0.018	0.08	0.029	0.07	....	0.10	0.15	0.06	0.20
3	....	0.023	....	....	0.020	....	0.000	0.04	0.023	0.06	0.018	....	0.029	0.02	....	0.02	....	T	....
4	....	0.014	....	....	0.018	....	0.000	....	0.024	....	0.018	....	0.029	T	....	....	....	....	....
5	....	0.016	....	....	0.015	....	0.000	....	0.026	....	0.018	....	0.029	....	....	....	....	....	....
6	....	0.015	....	....	0.013	....	0.000	....	0.029	....	0.018	....	0.029	....	....	....	....	....	....
7	....	0.017	....	....	0.013	....	0.000	....	0.026	....	0.018	....	0.029	T	....	....	....	T	....
8	....	0.017	....	....	0.013	....	0.000	....	0.023	....	0.018	....	0.029	....	....	....	....	T	....
9	0.05	0.017	0.24	0.20	0.013	0.19	0.000	0.01	0.023	0.08	0.018	0.22	0.029	0.23	....	0.10	0.26	0.04	0.30
10	0.02	0.022	....	....	0.013	....	0.000	....	0.023	....	0.018	....	0.029	0.02	....	0.05	0.03	....	....
11	0.08	0.015	....	....	0.013	....	0.000	....	0.023	....	0.018	....	0.029	....	....	....	....	....	....
12	0.20	0.022	0.40	0.41	0.015	0.35	0.002	....	0.023	....	0.012	0.33	0.029	0.32	....	0.31	0.21	0.07	0.24
13	0.02	0.029	0.09	0.08	0.040	0.06	0.026	0.40	0.023	0.46	0.020	0.09	0.045	T	....	0.05	0.15	....	....
14	....	0.054	....	....	0.052	....	0.039	....	0.061	....	0.047	....	0.067	0.07	....	0.32	....	....	0.10
15	....	0.043	....	....	0.033	....	0.026	....	0.045	....	0.052	....	0.057	T	....	....	T	....	....
16	....	0.030	....	....	0.025	....	0.019	....	0.034	....	0.036	....	0.041	....	....	....	....	....	....
17	....	0.020	....	....	0.020	....	0.015	....	0.029	....	0.029	....	0.045	T	....	T	0.05	T	....
18	0.94	0.064	0.79	0.79	0.093	0.80	0.063	0.60	0.038	0.59	0.035	0.79	0.082	0.70	....	0.68	0.46	1.10	0.63
19	0.07	0.128	0.04	0.05	0.090	0.25	0.107	....	0.074	....	0.073	....	0.071	0.14	....	0.10	0.12	0.06	0.12
20	....	0.089	....	....	0.063	....	0.074	....	0.048	....	0.072	....	0.071	....	....	....	....	....	....
21	....	0.129	....	....	0.082	....	0.095	....	0.058	....	0.070	....	0.077	....	....	....	....	....	....
22	....	0.106	....	....	0.072	....	0.090	....	0.052	....	0.070	....	0.071	....	....	....	....	....	....
23	....	0.079	....	....	0.052	....	0.066	....	0.044	....	0.063	....	0.071	....	....	....	....	....	....
24	1.31	0.085	1.62	1.61	0.040	1.34	0.054	....	0.040	....	0.055	1.41	0.080	0.06	....	T	....	T	....
25	....	0.317	....	....	0.328	....	0.248	1.15	0.144	1.16	0.138	....	0.216	1.34	....	1.30	0.55	1.10	1.23
26	....	0.205	0.03	0.03	0.161	0.03	0.180	0.02	0.124	0.06	0.171	....	0.193	....	....	....	....	T	....
27	0.02	0.148	....	....	0.105	....	0.131	....	0.080	....	0.137	....	0.144	0.01	....	0.04	....	0.02	T
28	....	0.128	....	....	0.086	....	0.102	....	0.068	....	0.115	....	0.094	....	....	....	....	....	....
Total	2.80	1.88	3.27	3.24	1.56	3.10	1.34	2.30	1.25	2.60	1.40	2.92	1.79	2.98	....*	3.12	1.98	2.45	2.82

*No record.

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1926																			
Mar. 1	....	0.102	....	....	0.069	....	0.085	....	0.055	0.06	0.094	....	0.071	T	....	T	T	T	....
2	....	0.085	....	....	0.052	....	0.060	0.05	0.042	0.06	0.076	....	0.059	....	....	T	T	T	....
3	....	0.071	....	....	0.038	....	0.044	....	0.036	....	0.062	....	0.049	....	....	T	....	....	....
4	....	0.062	....	....	0.033	....	0.032	....	0.030	....	0.052	....	0.049	....	....	....	....	....	....
5	....	0.055	....	....	0.030	....	0.027	....	0.029	....	0.044	....	0.045	....	0.04	....	....	....	....
6	0.76	0.047	0.52	0.53	0.030	0.47	0.026	0.41	0.029	0.31	0.043	0.34	0.041	0.34	0.38	0.38	0.17	0.18	0.15
7	....	0.044	....	....	0.028	....	0.024	0.08	0.029	0.19	0.039	....	0.041	0.02	0.07	T	0.05	T	0.10
8	....	0.037	....	....	0.020	....	0.022	....	0.029	....	0.039	....	0.041	....	....	....	....	T	....
9	....	0.031	....	....	0.015	....	0.015	....	0.026	....	0.031	....	0.039	....	....	....	....	....	....
10	0.17	0.031	0.27	0.25	0.015	0.35	0.015	0.05	0.024	0.23	0.027	0.35	0.037	0.23	0.24	0.35	0.31	0.40	0.12
11	0.10	0.040	....	....	0.025	....	0.019	....	0.026	....	0.027	....	0.037	0.12	....	0.10	0.06	0.15	0.16
12	....	0.039	0.15	0.16	0.023	0.18	0.022	0.25	0.028	0.28	0.029	0.17	0.037	0.19	0.23	0.20	0.12	0.18	0.44
13	....	0.031	....	....	0.023	0.02	0.015	....	0.026	....	0.027	....	0.041	T	....	....	....	....	T
14	0.17	0.029	....	....	0.020	....	0.015	....	0.026	0.08	0.025	0.09	0.041	T	....	0.08	0.10	0.02	....
15	....	0.028	0.05	0.05	0.015	0.01	0.014	....	0.026	....	0.025	....	0.029	0.05	0.09	0.02	0.03	T	0.07
16	....	0.029	....	....	0.015	....	0.014	0.07	0.028	0.01	0.025	....	0.029	....	....	....	....	T	....
17	....	0.037	....	....	0.018	....	0.015	....	0.028	....	0.025	....	0.029	....	....	....	....	....	....
18	....	0.037	....	....	0.023	....	0.017	....	0.029	....	0.026	....	0.045	....	0.02	....	....	0.05	....
19	0.61	0.044	0.20	0.16	0.030	0.17	0.027	0.12	0.036	0.37	0.034	0.32	0.045	0.05	0.22	....	T	0.22	T
20	....	0.067	....	....	0.038	....	0.042	....	0.046	....	0.050	....	0.049	0.29	....	0.66	0.27	....	T
21	....	0.062	....	....	0.030	....	0.044	....	0.045	0.06	0.053	....	0.049	....	....	....	....	....	....
22	0.09	0.058	0.13	0.12	0.030	0.13	0.039	0.06	0.044	0.04	0.050	0.13	0.043	0.13	0.42	0.15	0.07	0.24	0.20
23	....	0.055	....	....	0.030	....	0.039	....	0.044	....	0.050	....	0.043	....	....	....	0.11	....	....
24	....	0.053	....	....	0.028	....	0.036	....	0.044	....	0.047	0.01	0.043	....	....	....	....	....	....
25	....	0.047	....	....	0.028	....	0.030	0.03	0.036	0.07	0.043	....	0.037	....	....	....	....	....	....
26	....	0.038	....	....	0.025	....	0.026	....	0.032	....	0.034	....	0.037	T	T	0.03	0.05	0.06	....
27	0.03	0.033	0.04	0.04	0.023	0.04	0.019	....	0.029	....	0.031	0.02	0.037	0.03	....	....	....	0.05	....
28	....	0.031	....	....	0.018	....	0.019	....	0.028	....	0.028	....	0.037	T	....	....	0.03	T	....
29	....	0.031	....	....	0.018	....	0.017	....	0.029	....	0.026	....	0.037	....	....	....	....	....	....
30	0.53	0.031	0.46	0.39	0.018	0.48	0.017	0.44	0.029	0.34	0.025	0.87	0.037	0.70	0.50	0.65	0.40	1.28	0.26
31	0.43	0.064	0.37	0.38	0.035	0.34	0.039	0.10	0.039	0.34	0.036	0.36	0.041	0.60	0.31	0.05	0.26	0.12	0.53
Total	2.89	1.45	2.19	2.08	0.84	2.19	0.88	1.66	1.03	2.44	1.22	2.66	1.30	2.75	2.52	2.67	2.03	2.95	2.03

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7						
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Urbana Rainfall in.	Tuscola Rainfall in.	Decatur Rainfall in.	Clinton Rainfall in.	Roberts Rainfall in.	Danville Rainfall in.
1926																		
Apr. 1	....	0.082	....	....	0.046	....	0.048	0.35	0.042	0.05	0.050	....	0.080	....	....	0.04	....	....	....
2	0.54	0.089	0.54	0.53	0.058	0.58	0.060	0.04	0.046	0.18	0.053	0.57	0.082	0.54	0.92	....	....	0.42	0.52
3	....	0.095	....	....	0.075	....	0.095	....	0.085	....	0.091	....	0.092	0.02	....	0.65	....	0.03	0.15
4	....	0.129	....	....	0.096	....	0.117	....	0.077	....	0.095	....	0.097	....	....	....	....	....	....
5	....	0.133	....	....	0.075	....	0.095	....	0.064	....	0.089	....	0.084	....	....	....	....	....	....
6	1.15	0.168	0.95	0.92	0.096	1.30	0.107	0.81	0.074	0.70	0.133	1.08	0.114	0.57	1.02	0.22	2.29	0.56	0.40
7	1.49	0.670	0.92	1.05	0.442	1.37	0.570	1.28	0.386	0.78	0.347	1.13	0.301	1.56	1.28	2.05	1.25	0.41	2.71
8	....	0.357	....	....	0.256	....	0.268	0.14	0.258	0.40	0.298	....	0.166	0.06	0.12	0.18	....	....	0.35
9	....	0.231	....	....	0.145	....	0.175	0.17	0.149	0.34	0.202	....	0.130	....	....	....	....	....	....
10	....	0.188	....	....	0.105	....	0.141	....	0.100	....	0.150	....	0.103	....	....	....	....	....	....
11	....	0.129	....	....	0.090	....	0.112	....	0.074	....	0.123	....	0.103	T	....	0.08	0.11	....	....
12	....	0.119	....	....	0.069	....	0.090	....	0.061	....	0.098	....	0.103	....	....	0.10	....	....	....
13	....	0.110	....	....	0.051	....	0.078	....	0.052	....	0.083	....	0.103	....	....	....	....	....	....
14	....	0.090	....	....	0.055	....	0.063	....	0.045	....	0.070	....	0.097	....	....	....	T	....	....
15	....	0.072	....	....	0.046	....	0.054	....	0.039	....	0.057	....	0.097	....	....	....	....	....	....
16	....	0.067	....	....	0.043	....	0.044	....	0.039	....	0.053	....	0.086	....	....	....	....	....	....
17	0.28	0.064	0.37	0.36	0.040	0.27	0.036	0.40	0.036	0.38	0.046	0.40	0.086	0.15	0.16	0.02	0.18	0.75	0.14
18	....	0.064	....	....	0.038	....	0.030	....	0.036	....	0.044	....	0.063	0.22	1.00	0.78	0.17	T	....
19	....	0.058	....	....	0.033	....	0.027	....	0.036	....	0.041	....	0.047	....	....	....	....	....	....
20	....	0.054	....	....	0.035	....	0.027	....	0.036	....	0.038	....	0.037	....	....	....	....	....	....
21	....	0.050	....	....	0.038	....	0.027	....	0.034	....	0.034	....	0.029	....	....	....	....	....	....
22	0.44	0.050	0.53	0.54	0.035	0.59	0.027	0.26	0.032	0.17	0.032	0.51	0.037	0.41	0.70	0.10	0.41	0.58	0.25
23	0.20	0.053	....	....	0.035	....	0.027	....	0.038	....	0.035	....	0.049	0.10	0.06	0.42	0.09	0.10	0.11
24	0.26	0.063	0.35	0.35	0.035	0.39	0.039	0.06	0.052	0.31	0.048	0.40	0.069	0.37	0.50	0.52	0.69	0.42	0.65
25	....	0.060	....	....	0.033	....	0.039	....	0.046	....	0.051	....	0.052	0.01	T	....	....	....	....
26	....	0.054	....	....	0.033	....	0.036	....	0.042	....	0.047	....	0.049	....	....	....	....	....	....
27	0.01	0.049	0.03	0.04	0.033	0.02	0.032	....	0.040	....	0.045	....	0.043	T	0.03	....	0.13	T	T
28	....	0 044	....	....	0.030	....	0.027	....	0.036	....	0.039	....	0.041	....	....	....	....	T	....
29	....	0.038	....	....	0.030	....	0.026	....	0.032	....	0.034	....	0.031	....	....	....	....	T	....
30	....	0.034	....	....	0.030	....	0.025	....	0.032	....	0.031	....	0.029	....	....	....	....	....	....
Total	4.37	3.46	3.69	3.79	2.24	4.52	2.54	3.51	2.12	3.31	2.56	4.09	2.50	4.01	5.79	5.16	5.32	3.27	4.69

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1926																			
May 1	....	0.026	....	....	0.024	....	0.022	....	0.030	....	0.029	....	0.029	....	....	....	....	....	....
2	0.02	0.026	0.05	0.05	0.024	0.05	0.022	....	0.029	0.03	0.029	0.03	0.029	0.02	....	....	0.24	0.24	....
3	....	0.023	....	....	0.028	....	0.019	....	0.028	....	0.026	....	0.029	....	....	0.10	....	0.14	0.08
4	....	0.022	....	....	0.028	....	0.019	....	0.026	....	0.023	....	0.029	....	....	....	....	....	....
5	....	0.022	....	....	0.028	....	0.019	....	0.026	....	0.023	....	0.029	....	....	....	....	....	....
6	....	0.022	....	....	0.020	....	0.019	....	0.026	....	0.020	....	0.028	....	....	....	....	....	....
7	....	0.022	....	....	0.020	....	0.019	....	0.026	....	0.020	....	0.024	....	....	....	....	....	....
8	....	0.022	....	....	0.020	....	0.019	0.03	0.026	0.06	0.019	....	0.019	T	0.20	....	T	....	....
9	0.34	0.022	0.21	0.16	0.022	0.25	0.019	....	0.026	....	0.019	0.34	0.019	0.18	0.20	....	....	0.16	0.18
10	0.05	0.032	....	0.02	0.024	....	0.019	1.12	0.030	0.45	0.019	....	0.019	0.13	....	0.51	0.39	0.10	0.34
11	....	0.028	....	....	0.024	....	0.019	....	0.036	....	0.028	....	0.019	....	....	1.76	....	....	....
12	....	0.024	....	....	0.024	....	0.019	....	0.030	....	0.045	....	0.019	....	....	....	....	....	....
13	0.13	0.023	0.02	0.05	0.024	0.04	0.019	....	0.029	0.03	0.031	....	0.019	T	....	....	....	0.22	....
14	....	0.022	....	....	0.024	0.04	0.022	....	0.028	....	0.027	....	0.019	T	....	....	....	0.08	0.24
15	....	0.017	....	....	0.024	....	0.024	....	0.026	....	0.024	....	0.019	....	....	T	....	T	....
16	....	0.017	....	....	0.024	....	0.024	....	0.026	....	0.020	....	0.019	....	....	....	....	....	....
17	....	0.017	....	....	0.022	....	0.024	0.04	0.024	....	0.016	....	0.019	....	0.76	....	....	0.50	....
18	0.20	0.017	0.29	0.30	0.022	0.35	0.024	1.12	0.024	0.52	0.016	0.21	0.019	0.17	0.18	0.40	0.85	0.70	0.56
19	....	0.017	....	....	0.022	....	0.026	....	0.024	....	0.015	....	0.019	....	0.12	0.35	....	0.05	....
20	....	0.017	....	....	0.020	....	0.024	0.03	0.023	0.09	0.016	....	0.019	....	....	....	....	T	....
21	0.17	0.017	0.28	0.21	0.020	0.36	0.026	....	0.023	....	0.014	0.29	0.019	0.24	0.08	....	0.21	0.38	0.20
22	0.11	0.015	....	0.09	0.020	....	0.026	....	0.023	....	0.013	....	0.019	0.08	0.65	0.10	....	T	0.16
23	....	0.013	....	....	0.020	....	0.026	0.04	0.023	....	0.011	....	0.019	....	....	....	....	T	....
24	....	0.013	....	....	0.020	....	0.027	....	0.023	....	0.010	....	0.019	....	....	....	....	0.74	....
25	....	0.013	....	....	0.018	....	0.027	....	0.023	....	0.010	....	0.019	....	....	....	....	....	....
26	....	0.013	....	....	0.018	....	0.027	0.01	0.023	0.03	0.010	....	0.019	....	....	....	....	0.20	0.07
27	....	0.013	....	....	0.018	....	0.030	....	0.023	....	0.009	....	0.019	....	....	....	0.11	T	....
28	....	0.013	....	....	0.016	....	0.030	....	0.021	....	0.008	....	0.019	....	....	....	....	T	....
29	....	0.013	....	....	0.016	....	0.032	0.05	0.023	....	0.007	....	0.019	....	....	....	....	....	....
30	0.48	0.013	0.60	0.51	0.016	0.82	0.036	....	0.023	0.38	0.008	0.69	0.033	0.65	0.52	0.70	0.41	0.08	0.67
31	0.64	0.015	0.59	0.60	0.022	0.39	0.042	....	0.029	0.14	0.009	0.83	0.043	0.87	0.54	0.06	0.11	0.10	0.38
Total	2.14	0.59	2.04	1.99	0.67	2.30	0.75	2.44	0.80	1.73	0.57	2.39	0.69	2.34	3.25	3.98	2.32	3.69	2.88

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7						
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Urbana Rainfall in.	Tuscola Rainfall in.	Decatur Rainfall in.	Clinton Rainfall in.	Roberts Rainfall in.	Danville Rainfall in.
1926																		
June 1	0.09	0.026	0.02	0.02	0.035	0.04	0.051	0.02	0.045	0.03	0.015	0.06	0.059	0.07	0.22	0.58	0.17	....	0.03
2	....	0.015	....	....	0.025	....	0.044	....	0.032	....	0.014	....	0.043	....	....	....	....	....	....
3	....	0.013	....	....	0.018	....	0.042	....	0.029	....	0.010	....	0.029	T	T	....	....	....	....
4	0.09	0.012	0.12	0.12	0.018	0.07	0.042	....	0.026	0.01	0.009	0.08	0.029	0.09	T	0.04	0.10	0.06	....
5	....	0.012	....	....	0.018	....	0.039	....	0.023	....	0.008	....	0.029	....	T	....	....	....	....
6	0.03	0.012	0.09	0.09	0.018	0.09	0.042	....	0.023	0.03	0.008	0.09	0.029	0.08	0.06	....	....	T	....
7	....	0.010	....	....	0.013	....	0.039	....	0.023	....	0.007	....	0.029	....	....	....	....	....	....
8	....	0.010	....	....	0.009	....	0.039	....	0.019	....	0.005	....	0.029	....	....	....	....	....	....
9	....	0.010	....	....	0.005	....	0.032	....	0.016	....	0.005	....	0.029	....	....	....	....	....	....
10	....	0.010	....	....	0.007	....	0.032	....	0.016	....	0.005	....	0.029	....	....	....	....	....	....
11	1.00	0.026	1.50	1.46	0.058	1.56	0.044	1.21	0.039	0.96	0.005	1.35	0.029	1.46	0.65	2.05	3.91	0.38	1.80
12	0.56	0.023	0.82	0.84	0.052	0.73	0.070	1.08	0.071	0.68	0.020	0.62	0.120	0.56	0.60	0.86	0.66	0.68	0.33
13	....	0.022	....	....	0.038	0.21	0.085	0.57	0.071	0.47	0.045	....	0.103	0.04	....	0.26	0.56	T	....
14	0.33	0.021	0.24	0.26	0.039	0.13	0.074	....	0.055	0.26	0.042	0.17	0.097	0.14	0.25	0.05	0.26	0.40	0.43
15	....	0.017	....	....	0.020	....	0.063	....	0.044	....	0.030	....	0.086	T	....	0.15	....	....	....
16	....	0.015	....	....	0.018	0.69	0.056	....	0.038	0.05	0.023	....	0.086	0.12	0.22	....	0.51	0.02	0.13
17	0.80	0.020	0.66	0.68	0.046	....	0.067	0.15	0.040	0.06	0.023	0.53	0.086	0.46	0.90	0.95	0.45	0.50	0.35
18	....	0.020	....	....	0.035	....	0.070	....	0.042	....	0.023	....	0.063	....	....	....	....	T	....
19	....	0.017	....	....	0.033	....	0.060	....	0.036	....	0.020	....	0.045	....	....	....	....	T	....
20	....	0.013	....	....	0 028	....	0.051	....	0.032	....	0.016	....	0.029	....	....	....	0.04	0.07	T
21	0.02	0.013	....	....	0.023	0.02	0.044	....	0 029	....	0.015	....	0.029	....	....	....	....	....	....
22	....	0.013	....	....	0.020	....	0.039	....	0.028	....	0.013	....	0.029	....	....	....	0.03	....	....
23	....	0.013	....	....	0.020	0.09	0.032	....	0.023	....	0.010	....	0.029	....	....	....	0.03	0.04	....
24	....	0.010	0.03	....	0.018	0.07	0.027	....	0.023	0.22	0.010	0.09	0.029	0.08	....	....	....	0.06	0.13
25	0.19	0.010	0.06	0.08	0.018	0.05	0.026	0.40	0.019	0.28	0.009	0.23	0.037	0.10	0.15	....	....	....	....
26	....	0.010	....	....	0.015	....	0.024	....	0.039	....	0.026	....	0.033	....	....	....	....	....	....
27	....	0.006	....	....	0.015	....	0.019	....	0.029	....	0.024	....	0.026	....	....	....	....	....	....
28	....	0.006	....	....	0.013	....	0.015	....	0.023	....	0.016	....	0.015	....	....	....	....	....	....
29	0.07	0.006	0.23	0.18	0.013	0.07	0.014	....	0.016	....	0.013	0.36	0.012	....	....	....	....	....	....
30	....	0.006	....	....	0.011	....	0.012	0.12	0.016	0.28	0.010	....	0.010	0.40	0.04	....	....	....	0.35
Total	3.18	0.42	3.77	3.73	0.69	3.82	1.29	3.55	0.96	3.33	0.48	3.58	1.35	3.60	3.09	4.98	6.75	2.14	3.55

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TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1926																			
July 1	....	0.006	....	....	0.008	....	0.007	....	0.013	....	0.008	....	0.008	....	....	....	....	....	....
2	....	0.006	....	....	0.008	....	0.007	....	0.010	....	0.006	....	0.008	....	....	....	....	T	....
3	1.48	0.006	0.01	0.03	0.006	....	0.006	....	0.010	....	0.005	....	0.008	....	....	....	....	0.06	1.00
4	....	0.006	....	....	0.006	....	0.005	....	0.010	....	0.005	....	0.008	....	....	0.38	....	....	0.02
5	....	0.028	....	....	0.005	....	0.004	0.04	0.010	....	0.004	....	0.003	....	....	0.02	....	....	....
6	0.24	0.041	0.20	....	0.005	....	0.002	....	0.006	0.16	0.003	1.17	0.003	1.24	....	....	....	T	....
7	....	0.020	....	....	0.003	....	0.001	....	0.006	....	0.003	....	0.009	....	....	....	....	....	....
8	....	0.017	....	....	0.001	....	0.000	0.03	0.006	....	0.003	....	0.000	T	....	....	....	0.06	....
9	0.29	0.012	0.22	0.27	0.001	0.37	0.000	....	0.006	0.19	0.003	0.19	0.000	0.04	0.07	0.24	0.45	0.39	0.44
10	....	0.010	....	....	0.000	....	0.000	....	0.006	....	0.003	....	0.000	0.10	0.12	0.31	0.03	1.20	0.17
11	....	0.009	....	....	0.000	....	0.000	....	0.004	....	0.002	....	0.000	....	....	....	....	....	0.59
12	....	0.008	....	....	0.000	....	0.000	....	0.003	....	0.001	....	0.000	T	....	....	....	0.70	....
13	1.21	0.030	1.02	1.03	0.016	1.43	0.000	....	0.010	0.40	0.005	1.27	0.055	1.22	0.45	0.38	0.38	....	....
14	....	0.033	....	....	0.005	....	0.000	....	0.014	....	0.010	....	0.035	....	....	....	....	....	....
15	....	0.024	....	....	0.000	....	0.000	....	0.008	....	0.005	....	0.015	....	....	....	....	....	....
16	....	0.019	....	....	0.000	....	0.000	....	0.006	....	0.005	....	0.012	....	....	....	....	....	....
17	....	0.013	....	....	0.000	....	0.000	....	0.006	....	0.004	....	0.008	....	....	....	....	T	....
18	....	0.010	....	....	0.000	....	0.000	....	0.003	....	0.003	....	0.008	....	....	....	....	T	....
19	....	0.006	....	....	0.000	....	0.000	....	0.003	....	0.002	....	0.005	....	....	....	....	....	....
20	....	0.006	....	....	0.000	....	0.000	....	0.003	....	0.001	....	0.005	....	....	....	....	....	....
21	....	0.006	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.005	....	....	....	....	....	....
22	0.17	0.004	0.05	0.11	0.000	0.48	0.000	0.01	0.003	0.03	0.000	....	0.005	T	....	0.02	0.81	3.09	....
23	....	0.004	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.003	....	....	....	....	....	....
24	....	0.004	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.000	....	....	....	....	....	....
25	0.16	0.004	0.02	0.03	0.000	0.09	0.000	....	0.003	....	0.000	....	0.000	....	0.43	....	0.03	0.27	....
26	....	0.004	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.000	....	....	0.88	....	0.05	....
27	....	0.004	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.000	....	....	....	....	....	....
28	....	0.004	0.04	0.04	0.000	0.01	0.000	....	0.003	....	0.000	....	0.000	....	....	....	....	....	....
29	0.08	0.004	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.000	....	....	....	....	....	....
30	....	0.004	....	....	0.000	....	0.000	....	0.002	....	0.000	....	0.000	....	....	....	....	....	....
31	0.96	0.007	1.16	1.09	0.005	0.92	0.000	0.15	0.002	0.65	0.000	1.68	0.000	1.78	2.12	2.61	2.61	2.30	1.60
Total	4.59	0.36	2.72	2.60	0.08	3.30	0.03	0.23	0.17	1.43	0.08	4.31	0.20	4.38	3.19	4.84	4.31	8.12	3.82

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7						
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Urbana Rainfall in.	Tuscola Rainfall in.	Decatur Rainfall in.	Clinton Rainfall in.	Roberts Rainfall in.	Danville Rainfall in.
1926																		
Aug. 1	0.81	0.024	0.12	0.15	0.035	0.25	0.000	0.02	0.003	0.08	0.000	0.10	0.005	0.11	....	....	0.11	0.80	0.53
2	....	0.022	....	....	0.001	....	0.000	....	0.003	....	0.000	....	0.005	T	....	0.02	....	T	....
3	....	0.015	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.005	T	....	....	....	....	....
4	....	0.011	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.005	....	....	....	....	....	....
5	0.19	0.009	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.000	....	....	....	....	....	....
6	0.04	0.006	0.13	0.09	0.000	0.03	0.000	0.05	0.003	0.13	0.000	0.22	0.000	0.25	....	....	....	....	0.03
7	....	0.006	....	....	0.000	....	0.000	0.04	0.000	0.01	0.000	....	0.000	....	....	0.03	....	....	....
8	....	0.006	....	....	0.000	....	0.000	....	0.000	....	0.000	....	0.000	....	....	....	....	....	....
9	0.33	0.006	0.13	0.16	0.000	0.22	0.000	0.20	0.000	0.16	0.001	0.09	0.000	0.09	0.04	....	0.29	0.20	....
10	....	0.006	....	....	0.000	0.04	0.000	....	0.000	....	0.001	....	0.000	....	....	0.32	....	0.90	....
11	0.04	0.006	....	....	0.000	0.06	0.000	....	0.000	....	0.002	0.20	0.002	0.03	....	....	....	....	....
12	0.04	0.006	0.20	0.16	0.000	0.14	0.000	1.56	0.010	0.88	0.002	0.36	0.045	0.27	1.42	....	0.85	0.87	0.84
13	1.47	0.012	0.99	0.95	0.000	0.21	0.000	1.53	0.016	0.71	0.002	1.10	0.052	0.88	....	0.05	0.06	0.61	2.85
14	....	0.078	....	....	0.010	....	0.000	....	0.107	....	0.013	....	0.071	0.22	....	0.09	....	0.05	0.08
15	0.09	0.055	0.26	0.27	0.000	0.06	0.000	....	0.065	0.09	0.013	0.02	0.063	0.02	0.15	....	....	....	....
16	0.02	0.039	0.05	0.05	0.000	0.03	0.000	0.10	0.032	0.19	0.010	0.03	0.049	0.04	0.30	....	0.15	T	0.07
17	0.03	0.039	0.01	....	0.000	0.06	0.000	....	0.019	0.08	0.006	0.06	0.041	0.02	0.04	0.19	....	T	....
18	....	0.035	....	....	0.000	....	0.000	0.17	0.019	....	0.004	....	0.029	0.04	....	0.08	....	T	0.12
19	0.04	0.028	0.08	0.08	0.000	0.06	0.000	....	0.013	0.10	0.003	0.12	0.029	0.09	1.90	0.98	0.21	T	0.20
20	0.09	0.023	0.27	0.27	0.000	0.21	0.000	0.35	0.014	0.19	0.002	0.13	0.057	0.15	0.08	1.03	0.31	0.55	0.31
21	....	0.021	....	....	0.000	....	0.000	....	0.016	....	0.002	....	0.045	....	....	....	....	....	....
22	0.03	0.013	....	....	0.000	....	0.000	0.06	0.010	0.06	0.001	....	0.033	....	....	....	....	....	....
23	0.27	0.013	....	0.26	0.000	0.09	0.000	0.17	0.004	0.25	0.001	0.26	0.029	0.03	T	....	0.16	0.12	....
24	....	0.013	0.26	....	0.000	....	0.000	....	0.006	....	0.000	....	0.029	0.21	0.30	0.42	0.04	....	0.65
25	....	0.012	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.029	....	....	....	....	....	....
26	....	0.010	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.029	....	....	....	....	....	....
27	....	0.010	....	....	0.000	....	0.000	....	0.003	....	0.000	....	0.029	....	....	....	....	....	....
28	....	0.008	....	....	0.000	....	0.000	....	0.003	....	0.001	....	0.029	....	....	....	....	....	....
29	0.27	0.008	0.89	0.67	0.000	0.38	0.000	....	0.024	0.13	0.002	1.40	0.029	1.56	0.58	....	0.85	0.46	0.04
30	....	0.007	....	....	0.000	....	0.000	0.05	0.092	0.12	0.013	....	0.021	....	....	1.65	T	....	....
31	0.28	0.004	0.01	0.01	0.000	0.06	0.000	....	0.055	....	0.010	....	0.012	....	T	....	0.02	....	....
Total	4.04	0.55	3.40	3.15	0.05	1.90	0.00	4.30	0.53	3.18	0.09	4.09	0.77	4.01	4.81	4.86	3.05	4.56	5.72

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1926																			
Sept. 1	0.62	0.004	0.37	0.33	0.000	0.47	0.000	....	0.034	0.20	0.009	0.50	0.008	0.27	0.06	2.20	0.67	1.97	0.98
2	0.23	0.037	0.81	0.84	0.005	0.15	0.000	0.12	0.023	0.28	0.005	0.19	0.005	0.43	0.70	....	0.02	0.10	1.29
3	2.05	0.032	1.49	1.63	0.030	2.18	0.000	....	0.014	0.55	0.004	1.56	0.067	0.60	....	0.32	2.00	0.82	1.16
4	1.58	0.333	1.85	1.88	0.238	1.50	0.075	2.96	0.079	1.10	0.052	1.48	0.330	2.52	2.83	4.20	2.88	1.05	2.09
5	0.24	0.283	0.11	0.07	0.142	0.09	0.053	0.07	0.258	....	0.163	0.22	0.233	0.21	0.14	0.43	0.18	0.04	0.15
6	0.06	0.185	....	....	0.074	....	0.019	0.20	0.207	....	0.151	....	0.212	0.05	....	0.28	....	....	0.04
7	....	0.139	....	....	0.045	....	0.005	....	0.152	0.13	0.121	....	0.178	....	....	....	....	....	....
8	1.78	0.119	2.52	2.50	0.050	2.69	0.010	2.73	0.138	1.37	0.095	2.52	0.213	1.05	2.12	....	2.55	0.45	1.27
9	....	0.266	....	....	0.290	....	0.160	....	0.930	....	0.245	....	1.069	1.29	2.95	3.60	1.56	1.00	1.50
10	....	0.207	....	....	0.179	....	0.146	....	0.471	....	0.286	....	0.652	....	....	....	....	....	....
11	....	0.147	....	....	0.127	....	0.109	....	0.376	....	0.282	....	0.397	....	....	....	....	....	....
12	0.41	0.114	0.18	0.19	0.096	0.34	0.083	0.14	0.236	0.17	0.250	0.11	0.244	0.12	0.06	....	0.41	0.21	0.16
13	....	0.102	....	....	0.074	....	0.055	....	0.191	....	0.200	....	0.178	....	T	0.12	....	....	....
14	....	0.081	....	....	0.059	....	0.036	....	0.155	....	0.161	....	0.130	0.02	....	....	0.23	0.30	....
15	0.57	0.074	0.41	0.52	0.074	0.82	0.039	0.40	0.127	0.24	0.129	0.37	0.094	0.32	0.55	0.02	0.63	0.65	0.48
16	....	0.097	....	....	0.096	....	0.053	....	0.103	....	0.116	....	0.067	0.02	T	0.72	0.02	0.03	....
17	....	0.081	....	....	0.077	....	0.039	....	0.080	....	0.101	....	0.049	....	....	....	....	....	....
18	....	0.068	....	....	0.061	....	0.032	....	0.067	....	0.084	....	0.049	....	....	....	....	....	....
19	0.50	0.057	0.09	0.20	0.050	0.09	0.024	0.20	0.052	0.15	0.065	....	0.047	T	0.60	....	....	T	0.17
20	....	0.071	....	....	0.043	....	0.017	....	0.040	....	0.051	....	0.045	T	....	0.31	0.01	0.16	....
21	....	0.061	....	....	0.041	....	0.011	....	0.039	....	0.043	....	0.045	....	....	....	....	....	....
22	....	0.052	....	....	0.039	0.50	0.007	0.11	0.038	0.12	0.036	....	0.043	0.07	0.68	....	....	T	0.14
23	0.24	0.044	0.20	0.16	0.036	....	0.004	0.25	0.032	0.06	0.031	0.26	0.041	0.21	0.33	0.20	1.34	3.54	0.17
24	....	0.044	....	....	0.034	....	0.001	....	0.036	0.20	0.030	....	0.052	T	T	0.46	0.02	0.10	....
25	1.34	0.092	1.03	1.06	0.086	1.25	0.095	1.54	0.152	0.19	0.145	1.04	0.579	1.20	0.98	2.18	1.23	0.61	1.20
26	....	0.128	....	....	0.093	....	0.131	....	0.154	....	0.210	....	0.301	....	....	....	0.01	....	....
27	0.71	0.098	0.64	0.62	0.077	0.70	0.095	0.60	0.120	0.40	0.188	0.95	0.226	0.44	0.66	0.12	0.30	0.30	0.19
28	0.25	0.122	0.30	0.30	0.099	0.45	0.131	0.48	0.162	0.46	0.200	....	0.233	0.54	0.84	0.94	0.60	0.30	0.68
29	0.32	0.145	0.36	0.40	0.120	0.27	0.146	0.23	0.168	0.23	0.228	0.35	0.193	0.11	0.41	0.08	0.18	0.03	0.07
30	0.06	0.153	....	....	0.124	0.19	0.122	0.27	0.155	0.22	0.223	0.09	0.153	0.29	0.14	0.38	0.43	0.35	0.27
Total	10.96	3.44	10.36	10.70	2.56	11.69	1.70	10.30	4.79	6.07	3.90	9.64	6.13	9.76	14.05	16.56	15.27	12.01	12.01

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7						
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Urbana Rainfall in.	Tuscola Rainfall in.	Decatur Rainfall in.	Clinton Rainfall in.	Roberts Rainfall in.	Danville Rainfall in.
1926																		
Oct. 1	1.98	0.231	1.64	1.62	0.210	2.62	0.044	3.07	0.334	2.00	0.235	1.80	0.508	1.83	0.72	2.88	1.51	1.28	0.69
2	0.69	0.538	1.14	1.10	0.445	....	0.401	0.05	1.188	0.97	0.377	1.13	1.505	1.10	1.51	1.68	3.01	1.40	0.51
3	0.57	0.538	0.10	0.21	0.482	1.08	0.368	....	0.796	....	0.416	0.19	0.723	0.09	0.03	....	0.10	0.75	0.19
4	0.18	0.349	0.12	0.10	0.300	0.19	0.306	0.21	0.393	0.21	0.419	0.30	0.204	0.14	0.08	0.29	0.80	0.10	0.13
5	0.12	0.258	0.17	0.19	0.216	0.24	0.214	0.34	0.329	0.24	0.422	....	0.168	0.25	0.20	0.26	0.92	0.25	0.09
6	....	0.218	....	....	0.176	....	0.160	0.07	0.304	0.21	0.406	....	0.163	....	....	....	....	0.05	....
7	....	0.175	....	....	0.142	....	0.131	....	0.262	....	0.375	....	0.156	....	....	....	....	....	....
8	....	0.152	....	....	0.124	....	0.109	0.16	0.223	0.34	0.345	....	0.144	....	....	T	....	0.28	0.24
9	....	0.136	....	....	0.108	....	0.087	0.06	0.171	0.18	0.335	....	0.130	....	0.02	0.02	0.12	....	....
10	....	0.119	0.02	0.03	0.096	0.05	0.075	....	0.114	....	0.229	....	0.118	T	0.03	0.02	....	T	T
11	....	0.104	....	....	0.090	....	0.066	....	0.084	0.03	0.188	....	0.108	0.02	0.04	....	....	....	....
12	0.28	0.092	0.07	0.10	0.077	0.20	0.053	0.17	0.068	0.08	0.159	0.11	0.089	0.08	T	....	....	0.30	....
13	....	0.089	....	....	0.074	....	0.049	....	0.060	....	0.132	....	0.080	....	0.03	0.07	0.33	....	0.09
14	....	0.082	....	....	0.074	....	0.045	0.05	0.052	0.10	0.114	....	0.069	....	....	....	....	....	....
15	....	0.079	0.03	0.03	0.074	....	0.044	....	0.046	....	0.100	....	0.061	....	....	....	....	....	....
16	....	0.072	....	....	0.068	....	0.039	....	0.044	....	0.092	....	0.052	T	T	....	....	0.35	....
17	....	0.069	....	....	0.061	....	0.034	....	0.040	....	0.083	....	0.049	....	....	....	....	....	....
18	....	0.064	....	....	0.056	....	0.032	....	0.038	....	0.075	....	0.049	....	T	....	....	T	....
19	0.28	0.058	0.27	0.29	0.050	0.20	0.024	0.15	0.032	0.06	0.064	0.20	0.049	0.16	0.14	0.20	0.18	T	0.15
20	0.03	0.053	....	....	0.050	....	0.022	....	0.030	....	0.056	....	0.049	0.01	0.08	....	0.04	T	....
21	....	0.053	....	....	0.050	0.04	0.019	....	0.029	....	0.053	....	0.049	T	....	0.05	....	0.05	....
22	....	0.053	....	....	0.050	....	0.017	....	0.029	....	0.050	0.04	0.049	0.06	0.16	....	....	....	0.12
23	0.13	0.044	0.26	0.25	0.050	0.26	0.017	0.28	0.029	0.21	0.046	0.20	0.045	0.22	0.03	....	T	0.09	....
24	....	0.044	....	....	0.048	....	0.016	....	0.029	....	0.040	....	0.041	....	....	0.32	0.31	0.51	0.23
25	....	0.042	....	....	0.043	....	0.015	....	0.028	....	0.037	....	0.037	....	....	....	....	T	T
26	....	0.039	....	....	0.036	....	0.015	0.04	0.026	....	0.036	....	0.033	....	....	....	....	....	....
27	....	0.039	....	....	0.036	....	0.015	....	0.023	0.13	0.034	....	0.031	....	....	....	....	....	....
28	0.03	0.037	0.03	0.06	0.039	0.04	0.014	....	0.023	....	0.031	....	0.029	0.01	....	T	T	0.40	0.03
29	....	0.037	....	....	0.034	....	0.012	....	0.023	....	0.027	....	0.029	....	0.28	....	....	....	0.03
30	0.45	0.037	0.43	0.42	0.036	0.39	0.012	0.41	0.024	0.27	0.025	0.47	0.029	0.48	0.42	0.41	0.14	0.10	0.52
31	....	0.037	....	....	0.041	....	0.014	....	0.029	....	0.028	....	0.029	....	....	....	....	....	....
Total	4.74	3.94	4.28	4.40	3.44	5.31	2.47	5.06	4.90	5.03	5.03	4.44	4.87	4.45	3.77	6.18	7.46	5.91	3.02

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds													U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1926																			
Nov. 1	....	0.037	....	....	0.044	....	0.036	....	0.028	....	0.030	....	0.029	T	....	T	0.01	....	....
2	....	0.037	....	....	0.044	....	0.032	....	0.024	....	0.027	....	0.023	....	....	....	....	....	....
3	0.30	0.037	0.15	0.16	0.044	0.20	0.032	0.08	0.023	0.20	0.024	0.10	0.023	0.06	0.08	0.02	0.03	0.26	0.05
4	....	0.037	....	....	0.044	....	0.032	....	0.023	....	0.024	....	0.023	0.05	0.04	0.02	0.03	....	....
5	....	0.037	....	....	0.044	....	0.032	....	0.023	....	0.022	....	0.023	....	....	....	....	....	....
6	....	0.031	....	....	0.044	....	0.032	....	0.023	....	0.023	....	0.023	....	....	....	....	....	....
7	....	0.031	....	....	0.046	....	0.032	....	0.023	....	0.020	....	0.023	....	....	....	....	....	....
8	....	0.031	....	....	0.046	....	0.030	0.59	0.023	....	0.020	....	0.023	0.14	0.16	0.25	0.25	0.54	0.06
9	0.64	0.044	0.55	0.56	0.046	0.47	0.030	....	0.023	0.90	0.023	0.70	0.023	0.50	0.40	0.27	0.35	0.21	0.17
10	....	0.044	....	....	0.044	....	0.032	....	0.023	....	0.022	....	0.023	....	....	....	....	T	....
11	....	0.044	....	....	0.044	....	0.032	....	0.023	....	0.022	....	0.023	....	....	....	....	....	....
12	....	0.044	....	....	0.049	....	0.032	....	0.023	....	0.024	....	0.023	....	....	....	....	....	....
13	....	0.044	0.02	0.02	0.049	0.03	0.032	0.07	0.023	0.05	0.024	....	0.023	T	....	0.08	1.90	0.97	....
14	0.46	0.050	0.05	0.03	0.049	....	0.032	....	0.023	....	0.026	....	0.029	0.12	0.07	0.67	1.15	0.27	....
15	0.43	0.122	0.73	0.76	0.066	0.78	0.082	0.78	0.046	0.32	0.045	0.59	0.029	0.53	0.55	0.44	0.62	0.63	0.50
16	....	0.112	....	....	0.083	....	0.102	0.15	0.052	0.21	0.080	0.07	0.029	0.04	0.10	0.03	0.07	T	0.05
17	0.39	0.098	0.54	0.51	0.083	0.60	0.098	0.27	0.048	0.44	0.080	0.61	0.067	0.55	0.60	0.88	0.81	0.52	0.38
18	0.28	0.133	0.06	0.08	0.136	....	0.153	0.09	0.068	0.20	0.093	....	0.094	0.02	0.09	0.06	0.25	0.13	0.02
19	....	0.152	....	....	0.114	....	0.126	0.05	0.054	0.12	0.093	....	0.092	T	T	....	....	T	....
20	....	0.133	....	....	0.090	....	0.095	....	0.045	....	0.080	....	0.086	T	....	....	T	T	....
21	....	0.085	....	....	0.077	....	0.078	....	0.045	....	0.068	....	0.071	....	....	....	....	....	....
22	....	0.061	....	....	0.066	....	0.070	....	0.034	....	0.063	....	0.071	....	....	....	....	T	....
23	0.02	0.057	....	....	0.061	....	0.063	....	0.029	....	0.062	....	0.071	....	....	....	....	....	....
24	....	0.055	....	....	0.056	....	0.056	....	0.029	....	0.055	....	0.071	....	....	....	....	....	....
25	0.26	0.053	....	....	0.056	0.11	0.056	0.16	0.029	0.20	0.051	....	0.071	T	0.04	T	0.06	0.07	....
26	....	0.069	0.36	0.40	0.063	0.14	0.056	0.20	0.030	0.35	0.054	0.39	0.100	0.35	0.70	0.32	0.67	0.10	0.17
27	....	0.076	....	0.02	0.063	....	0.056	....	0.032	....	0.054	....	0.086	....	....	....	0.06	....	....
28	0.07	0.067	0.09	0.04	0.061	0.12	0.056	....	0.032	0.01	0.058	0.11	0.080	T	....	T	T	0.02	....
29	0.05	0.064	0.01	0.03	0.058	....	0.054	....	0.029	....	0.054	....	0.071	0.10	0.02	0.05	0.15	0.03	0.08
30	....	0.064	....	....	0.053	....	0.051	....	0.029	....	0.049	....	0.059	....	....	....	....	....	....
Total	2.90	1.95	2.56	2.61	1.82	2.45	1.70	2.44	0.96	3.00	1.37	2.57	1.48	2.46	2.85	3.09	6.41	3.75	1.48

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7						
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Urbana Rainfall in.	Tuscola Rainfall in.	Decatur Rainfall in.	Clinton Rainfall in.	Roberts Rainfall in.	Danville Rainfall in.
1926																		
Dec. 1	....	0.064	....	....	0.049	....	0.044	....	0.029	....	0.047	....	0.049	....	0.04	....	....	....	....
2	....	0.058	....	....	0.046	....	0.044	....	0.028	....	0.042	....	0.049	....	....	....	....	....	....
3	....	0.053	....	....	0.049	....	0.044	....	0.026	....	0.043	....	0.049	....	....	....	....	....	....
4	....	0.050	....	....	0.046	....	0.039	0.08	0.024	0.02	0.038	....	0.049	T	0.02	T	....	T	....
5	0.06	0.047	0.06	0.07	0.046	0.13	0.039	....	0.023	....	0.034	....	0.049	T	....	0.04	0.08	0.10	....
6	....	0.042	....	....	0.042	....	0.032	....	0.023	....	0.029	....	0.049	T	....	....	....	0.22	....
7	0.26	0.042	0.21	0.25	0.042	0.42	0.032	0.17	0.023	0.40	0.029	0.12	0.049	0.10	0.11	0.31	0.41	0.19	....
8	....	0.042	....	....	0.037	....	0.032	....	0.023	....	0.028	....	0.049	T	0.03	0.02	....	T	....
9	....	0.042	....	....	0.035	....	0.032	....	0.023	....	0.027	....	0.049	T	0.16	T	T	T	....
10	....	0.042	....	....	0.042	0.02	0.032	....	0.023	....	0.031	....	0.049	T	....	....	0.03	....	....
11	....	0.042	....	....	0.044	....	0.032	....	0.023	....	0.030	....	0.049	T	....	T	....	0.07	....
12	....	0.042	....	....	0.044	....	0.032	....	0.023	....	0.029	....	0.049	T	....	....	T	T	....
13	0.06	0.037	....	....	0.040	....	0.032	0.08	0.023	0.24	0.025	....	0.049	T	....	T	T	T	....
14	....	0.037	....	....	0.035	....	0.027	....	0.023	....	0.020	....	0.049	....	....	....	....	....	....
15	....	0.034	....	....	0.035	....	0.027	....	0.021	....	0.019	....	0.049	....	....	....	T	....	....
16	....	0.034	....	....	0.035	....	0.027	....	0.018	....	0.020	....	0.049	....	....	....	....	....	....
17	....	0.031	....	....	0.035	....	0.027	....	0.016	....	0.022	....	0.049	T	....	....	....	....	....
18	....	0.031	....	....	0.033	....	0.024	....	0.016	....	0.018	....	0.049	....	....	....	....	....	....
19	0.05	0.031	0.08	0.09	0.033	0.07	0.022	....	0.016	....	0.015	0.13	0.063	0.07	0.07	0.20	0.14	T	....
20	....	0.031	....	....	0.033	....	0.022	0.43	0.016	0.41	0.016	....	0.063	0.05	T	0.01	0.02	T	....
21	0.11	0.026	0.20	0.18	0.031	0.16	0.022	0.21	0.016	0.27	0.015	0.23	0.071	0.02	0.03	0.21	....	0.26	....
22	....	0.026	....	....	0.031	....	0.022	....	0.016	....	0.015	....	0.071	0.20	....	0.03	0.12	0.13	....
23	0.32	0.026	0.31	0.33	0.033	0.33	0.022	0.35	0.016	0.23	0.015	0.25	0.080	0.13	....	0.49	....	0.10	....
24	....	0.026	....	....	0.058	....	0.032	....	0.029	....	0.034	....	0.080	0.12	....	0.03	....	....	....
25	0.25	0.026	0.10	0.10	0.049	0.20	0.032	0.24	0.029	0.30	0.040	0.19	0.071	0.13	0.13	0.01	....	0.28	....
26	....	0.026	....	....	0.044	....	0.027	....	0.023	0.03	0.031	....	0.063	0.04	0.16	....	....	0.07	....
27	....	0.026	....	....	0.037	....	0.024	....	0.023	....	0.027	....	0.055	T	....	....	....	....	....
28	0.02	0.026	0.03	0.03	0.035	0.02	0.024	0.13	0.021	0.15	0.026	0.05	0.052	0.07	0.19	0.01	....	....	....
29	....	0.026	....	....	0.028	....	0.024	....	0.018	....	0.023	....	0.049	T	....	....	....	....	....
30	....	0.026	....	....	0.026	....	0.024	....	0.016	....	0.022	....	0.049	....	....	....	....	....	....
31	....	0.026	....	....	0.028	....	0.022	....	0.016	....	0.019	....	0.049	T	....	T	0.01	T	....
Total	1.13	1.12	0.99	1.05	1.20	1.35	0.92	1.69	0.66	2.05	0.83	0.97	1.70	0.93	0.94	1.36	0.81	1.42	....*

*No record.

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7						
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Urbana Rainfall in.	Tuscola Rainfall in.	Decatur Rainfall in.	Clinton Rainfall in.	Roberts Rainfall in.	Danville Rainfall in.
1927																		
Jan. 1	....	0.031	....	....	0.028	....	0.022	....	0.016	....	0.016	....	0.049	....	....	....	....	....	....
2	....	0.034	....	....	0.031	....	0.022	....	0.016	....	0.015	....	0.049	....	....	....	....	....	....
3	....	0.034	....	....	0.033	0.04	0.022	....	0.018	....	0.017	....	0.049	T	....	T	....	....	....
4	0.05	0.034	....	0.01	0.031	....	0.022	....	0.021	....	0.020	0.05	0.049	0.03	....	0.01	0.03	T	....
5	....	0.026	....	....	0.028	....	0.022	....	0.021	....	0.020	....	0.049	....	....	....	....	T	....
6	....	0.025	....	....	0.026	....	0.019	....	0.021	....	0.020	....	0.049	....	....	....	....	....	....
7	....	0.025	....	....	0.026	....	0.019	....	0.021	....	0.019	....	0.049	....	....	....	....	....	....
8	....	0.025	....	....	0.026	....	0.017	....	0.021	....	0.019	....	0.041	....	....	....	....	....	....
9	0.27	0.025	0.12	0.11	0.024	0.18	0.017	0.10	0.019	0.14	0.020	0.07	0.041	0.07	0.06	0.07	0.08	T	0.07
10	....	0.025	....	....	0.024	....	0.015	....	0.019	....	0.019	....	0.029	0.02	....	0.07	0.06	0.09	....
11	....	0.025	....	....	0.022	....	0.015	....	0.019	....	0.017	....	0.029	....	....	....	0.01	....	....
12	....	0.025	....	....	0.022	....	0.015	....	0.019	....	0.016	....	0.029	....	T	0.10	0.12	0.70	....
13	1.06	0.025	0.85	0.87	0.022	1.09	0.015	1.16	0.018	1.32	0.019	1.10	0.029	0.99	1.28	1.41	1.00	0.60	0.96
14	....	0.020	....	....	0.024	....	0.015	....	0.016	....	0.020	....	0.029	....	....	....	....	T	....
15	....	0.020	....	....	0.028	....	0.015	....	0.016	....	0.019	....	0.029	....	....	....	....	....	....
16	....	0.020	....	....	0.026	....	0.015	....	0.016	....	0.019	....	0.029	....	....	....	....	....	....
17	....	0.020	....	....	0.024	....	0.015	....	0.016	....	0.019	....	0.029	....	....	....	....	....	....
18	0.10	0.022	0.08	0.08	0.024	0.08	0.015	0.36	0.016	0.07	0.017	0.12	0.029	0.13	0.07	0.12	0.07	....	0.10
19	....	0.020	0.03	0.02	0.022	....	0.015	....	0.016	....	0.017	....	0.029	T	T	....	T	....	....
20	....	0.020	....	....	0.022	....	0.014	....	0.016	....	0.016	....	0.029	....	....	T	....	....	....
21	....	0.017	0.08	0.08	0.020	0.09	0.012	0.27	0.016	0.43	0.016	0.06	0.029	0.01	0.04	0.03	0.05	T	....
22	0.09	0.017	0.03	....	0.020	....	0.012	....	0.016	....	0.015	0.36	0.029	0.25	0.12	0.02	0.04	0.02	0.35
23	0.15	0.017	0.22	0.25	0.020	0.25	0.010	0.05	0.016	0.12	0.015	....	0.029	0.15	0.16	0.30	0.04	T	0.29
24	....	0.017	0.09	0.09	0.020	0.03	0.007	....	0.016	0.02	0.015	....	0.029	T	....	....	....	....	....
25	....	0.017	....	....	0.018	....	0.007	....	0.014	....	0.015	....	0.029	....	....	0.05	....	....	....
26	....	0.017	....	....	0.013	....	0.014	....	0.012	....	0.014	....	0.029	....	T	....	....	....	....
27	....	0.017	....	....	0.018	....	0.007	....	0.013	....	0.014	....	0.029	....	T	....	....	T	....
28	0.10	0.022	0.03	0.03	0.022	0.02	0.012	0.05	0.016	0.03	0.019	....	0.029	T	0.07	T	0.04	T	....
29	....	0.072	....	....	0.056	....	0.048	....	0.029	0.04	0.040	....	0.086	0.02	T	....	0.07	T	....
30	0.03	0.213	....	....	0.219	....	0.197	....	0.163	....	0.133	....	0.468	....	....	....	....	....	....
31	....	0.205	....	....	0.204	....	0.221	....	0.191	....	0.171	....	0.504	....	....	....	....	....	....
Total	1.85	1.13	1.53	1.54	1.14	1.78	0.89	1.99	0.86	2.17	0.83	1.76	2.03	1.67	1.80	2.18	1.61	1.41	1.77

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7						
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Urbana Rainfall in.	Tuscola Rainfall in.	Decatur Rainfall in.	Clinton Rainfall in.	Roberts Rainfall in.	Danville Rainfall in.
1927																			
Feb. 1	....	0.160	....	....	0.179	....	0.215	....	0.177	....	0.176	....	0.301	....	....	....	....	....	....
2	....	0.148	....	....	0.154	....	0.203	....	0.145	....	0.168	....	0.226	....	....	....	....	....	....
3	....	0.136	....	....	0.130	....	0.180	....	0.120	....	0.165	....	0.226	T	....	....	....	....	....
4	0.50	0.136	0.39	0.41	0.114	0.51	0.158	0.30	0.097	0.39	0.153	0.31	0.345	0.13	....	0.17	0.28	0.28	0.26
5	....	0.122	....	....	0.139	....	0.175	....	0.115	....	0.137	....	0.378	0.20	....	0.10	0.29	0.57	0.26
6	....	0.119	....	....	0.127	....	0.153	....	0.085	....	0.139	....	0.226	....	....	....	....	....	....
7	....	0.112	....	....	0.096	....	0.126	....	0.055	....	0.128	....	0.166	....	....	....	....	....	....
8	0.09	0.108	0.04	0.09	0.080	0.20	0.112	0.03	0.045	0.07	0.112	0.04	0.123	0.03	....	0.02	0.22	....	....
9	0.07	0.095	....	....	0.071	....	0.095	0.01	0.040	0.03	0.083	....	0.092	0.01	0.07	0.04	0.01	T	0.02
10	....	0.085	....	....	0.066	....	0.082	....	0.036	....	0.068	....	0.086	....	....	....	....	....	....
11	....	0.076	....	....	0.063	....	0.070	....	0.032	....	0.062	....	0.086	....	....	....	....	....	....
12	....	0.067	....	....	0.061	....	0.060	....	0.029	....	0.060	....	0.086	....	....	....	....	....	....
13	0.36	0.064	0.35	0.33	0.056	0.43	0.054	0.49	0.029	0.58	0.058	0.33	0.094	0.27	0.42	0.39	0.11	0.07	0.25
14	....	0.064	....	....	0.056	....	0.056	....	0.032	....	0.063	....	0.092	0.05	T	0.02	0.03	0.20	....
15	....	0.064	....	....	0.053	....	0.063	....	0.032	....	0.064	....	0.084	....	....	....	....	....	....
16	....	0.064	....	....	0.053	....	0.063	....	0.029	....	0.065	....	0.052	T	....	T	....	T	....
17	0.03	0.064	0.02	0.04	0.051	0.12	0.056	....	0.029	....	0.060	....	0.045	T	....	T	0.06	0.36	....
18	....	0.055	....	....	0.049	....	0.051	....	0.026	....	0.050	....	0.041	....	....	....	0.03	0.09	....
19	....	0.053	....	....	0.049	....	0.048	....	0.023	....	0.046	....	0.035	....	....	....	....	....	....
20	....	0.050	....	....	0.049	....	0.044	....	0.023	....	0.039	....	0.029	....	....	....	....	....	....
21	....	0.044	....	....	0.049	....	0.039	....	0.023	....	0.039	....	0.029	....	....	....	....	....	....
22	....	0.042	....	....	0.044	....	0.039	....	0.023	....	0.038	....	0.029	T	T	....	T	....	....
23	....	0.037	....	....	0.040	....	0.032	....	0.023	....	0.031	....	0.029	....	....	....	....	....	....
24	....	0.037	....	....	0.040	....	0.032	....	0.021	....	0.029	....	0.029	....	....	T	T	....	....
25	0.37	0.037	0.38	0.38	0.042	0.58	0.032	0.45	0.021	0.47	0.029	0.53	0.029	0.53	0.39	0.37	0.21	0.45	0.37
26	....	0.037	....	....	0.042	....	0.032	....	0.021	....	0.030	....	0.029	T	T	T	T	0.06	T
27	....	0.037	....	....	0.037	....	0.032	....	0.019	....	0.029	....	0.029	T	T	T	T	....	T
28	....	0.037	....	....	0.035	....	0.029	....	0.019	....	0.027	....	0.029	....	....	....	T	....	....
Total	1.42	2.15	1.18	1.25	2.03	1.84	2.33	1.28	1.37	1.54	2.15	1.21	3.04	1.22	0.88	1.11	1.24	2.08	1.16

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Tus-	De-	Clin-	Rob-	Dan-
	Rain-fall in.	Run-off in.	Rain-fall in.	Rain-fall in.	Run-off in.	Rain-fall in.	Run-off in.	Rain-fall in.	Run-off in.	Rain-fall in.	Run-off in.	Rain-fall in.	Run-off in.	Urbana Rain-fall in.	cola Rain-fall in.	catur Rain-fall in.	ton Rain-fall in.	erts Rain-fall in.	ville Rain-fall in.
1927																		
Mar. 1	....	0.037	....	....	0.033	....	0.027	....	0.018	....	0.027	....	0.029	T	0.02	T	....	T	....
2	....	0.037	....	....	0.033	....	0.026	....	0.018	....	0.026	....	0.029	....	0.04	....	....	....	....
3	....	0.037	....	....	0.035	....	0.026	....	0.016	....	0.023	....	0.029	....	....	....	....	....	....
4	....	0.037	....	....	0.035	....	0.026	....	0.016	....	0.021	....	0.029	....	....	....	....	....	....
5	0.13	0.037	0.11	0.10	0.037	0.21	0.024	0.28	0.016	0.29	0.020	0.08	0.029	T	0.06	0.17	....	0.04	....
6	....	0.037	....	....	0.037	....	0.024	....	0.016	....	0.019	....	0.029	0.10	....	0.02	0.09	0.10	0.08
7	0.37	0.037	0.31	0.37	0.035	0.38	0.026	0.32	0.018	0.31	0.019	0.30	0.029	0.27	0.40	0.38	0.31	0.41	0.12
8	....	0.037	....	....	0.033	....	0.027	....	0.018	....	0.019	....	0.029	....	....	....	....	....	....
9	....	0.037	....	....	0.033	....	0.027	....	0.018	....	0.019	....	0.029	....	....	....	....	....	....
10	....	0.037	....	....	0.033	....	0.027	....	0.016	....	0.021	....	0.029	....	....	....	....	....	....
11	0.13	0.037	0.18	0.18	0.033	0.21	0.027	0.27	0.018	0.35	0.025	0.12	0.029	0.15	0.06	0.37	0.15	0.05	....
12	0.44	0.037	0.34	0.30	0.035	0.35	0.027	0.36	0.019	0.35	0.027	0.54	0.029	0.19	0.25	0.35	0.60	0.32	0.12
13	....	0.058	....	....	0.035	....	0.039	....	0.021	....	0.030	....	0.029	0.34	0.21	....	0.40	0.10	0.36
14	....	0.061	....	....	0.040	....	0.044	....	0.023	....	0.032	....	0.029	....	....	....	....	....	....
15	....	0.061	....	....	0.037	....	0.044	....	0.021	....	0.034	....	0.029	....	....	....	....	....	....
16	....	0.058	....	....	0.040	....	0.042	....	0.021	....	0.032	....	0.029	....	....	....	....	....	....
17	0.03	0.055	0.03	0.05	0.037	0.06	0.039	0.07	0.019	0.09	0.030	0.07	0.029	0.05	0.09	0.02	0.09	0.06	0.08
18	....	0.053	....	....	0.035	....	0.032	....	0.019	....	0.029	....	0.035	0.04	0.17	0.02	T	T	0.06
19	1.38	0.129	1.57	1.48	0.124	1.40	0.141	1.50	0.149	1.09	0.091	2.02	0.153	1.99	1.97	1.91	1.75	0.50	1.63
20	1.00	0.268	0.80	0.89	0.226	1.29	0.262	0.13	0.346	0.50	0.191	0.67	0.153	0.69	1.06	0.93	1.74	2.13	0.86
21	....	0.268	....	....	0.179	....	0.228	....	0.258	....	0.206	....	0.116	T	T	0.01	0.03	T	T
22	....	0.160	....	....	0.130	....	0.175	....	0.149	....	0.184	0.02	0.097	....	....	....	....	....	....
23	....	0.129	....	0.01	0.099	0.05	0.141	0.02	0.090	....	0.163	....	0.092	0.01	....	0.05	0.06	0.02	....
24	....	0.104	....	....	0.090	....	0.122	0.02	0.055	....	0.141	....	0.071	....	T	0.02	....	....	....
25	....	0.092	0.05	0.02	0.083	....	0.102	....	0.045	0.10	0.122	0.03	0.061	T	0.06	0.01	....	T	0.02
26	....	0.089	....	....	0.074	....	0.085	....	0.040	....	0.104	....	0.049	0.01	....	....	....	T	....
27	....	0.076	....	....	0.063	....	0.074	....	0.036	....	0.088	....	0.049	....	....	....	....	....	....
28	....	0.067	....	....	0.061	....	0.063	....	0.030	....	0.071	....	0.049	....	....	....	....	....	....
29	....	0.061	....	....	0.056	....	0.060	....	0.029	....	0.061	....	0.049	....	T	....	....	....	....
30	....	0.058	0.03	0.03	0.051	....	0.054	....	0.029	....	0.058	....	0.049	....	....	....	....	....	....
31	1.46	0.067	1.28	1.21	0.049	1.45	0.051	1.54	0.028	0.92	0.054	1.69	0.059	....	T	0.08	T	....	....
Total	4.94	2.36	4.70	4.64	1.92	5.40	2.11	4.51	1.62	4.00	1.99	5.54	1.58	3.84	4.39	4.34	5.22	3.73	3.33

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1927																			
Apr. 1	0.17	0.200	0.19	0.21	0.309	0.62	0.342	0.35	0.239	0.38	0.207	0.16	0.466	1.69	1.82	1.81	1.76	1.59	1.42
2	....	0.196	....	....	0.204	....	0.242	0.03	0.190	....	0.226	....	0.185	0.14	....	0.26	T	0.02	....
3	0.03	0.133	0.03	0.04	0.148	0.06	0.175	....	0.126	....	0.174	0.04	0.144	0.01	0.03	0.02	0.11	0.03	0.06
4	0.32	0.119	0.56	0.47	0.114	0.25	0.153	1.05	0.110	1.04	0.160	0.92	0.111	0.02	0.11	0.46	0.26	0.15	0.03
5	....	0.116	....	....	0.117	....	0.153	....	0.198	....	0.254	....	0.118	0.94	T	0.21	....	T	0.46
6	....	0.102	....	....	0.093	....	0.127	....	0.129	....	0.222	....	0.097	....	....	....	....	....	....
7	....	0.095	....	....	0.086	....	0.107	....	0.078	....	0.174	....	0.097	....	....	....	....	0.10	....
8	0.60	0.089	0.65	0.66	0.080	0.82	0.095	0.94	0.063	0.87	0.155	0.51	0.114	T	0.32	0.51	0.22	0.15	0.17
9	....	0.085	....	....	0.111	....	0.127	....	0.126	....	0.180	....	0.141	0.48	0.65	0.76	0.52	0.54	0.37
10	....	0.082	....	....	0.090	....	0.112	....	0.096	....	0.175	....	0.133	....	T	0.02	....	....	....
11	....	0.079	....	....	0.071	....	0.090	....	0.063	....	0.151	....	0.141	....	0.03	....	....	....	....
12	0.66	0.082	0.88	0.90	0.066	1.12	0.081	0.96	0.050	1.19	0.143	0.79	0.166	....	0.08	0.29	0.15	T	....
13	....	0.144	....	....	0.133	....	0.163	0.38	0.086	0.48	0.148	....	0.148	0.82	0.52	0.37	0.50	0.75	0.52
14	0.28	0.192	0.08	0.07	0.108	0.10	0.147	0.15	0.081	0.37	0.148	0.07	0.133	0.03	0.07	0.35	0.31	0.05	0.08
15	....	0.167	....	....	0.096	0.06	0.131	0.11	0.074	0.12	0.153	....	0.111	0.02	0.11	0.35	0.80	0.30	....
16	0.93	0.200	0.77	0.81	0.207	1.00	0.289	0.94	0.239	0.75	0.222	0.93	0.097	0.66	0.78	0.48	T	0.85	1.71
17	....	0.203	....	....	0.158	....	0.209	....	0.155	....	0.207	....	0.100	0.28	....	....	....	....	....
18	0.44	0.339	0.78	0.81	0.253	0.60	0.304	0.42	0.210	0.53	0.248	0.50	0.153	0.20	T	0.84	0.60	0.80	0.22
19	0.53	0.245	0.55	0.55	0.226	0.78	0.289	0.58	0.203	0.52	0.247	0.43	0.255	0.38	0.83	0.83	0.96	0.65	0.59
20	0.11	0.205	0.09	0.09	0.232	0.08	0.289	0.03	0.194	....	0.238	0.08	0.216	0.40	T	T	....	....	....
21	....	0.171	....	....	0.139	....	0.175	....	0.118	....	0.202	....	0.171	0.12	0.02	0.07	0.10	T	0.03
22	0.03	0.148	....	0.03	0.114	....	0.141	0.02	0.074	0.07	0.156	....	0.153	T	T	T	T	T	T
23	....	0.129	....	....	0.096	....	0.122	....	0.058	....	0.137	....	0.136	T	....	....	....	....	....
24	....	0.102	....	....	0.083	....	0.099	....	0.046	....	0.119	....	0.111	....	....	....	....	....	....
25	0.18	0.085	....	0.05	0.077	....	0.085	0.02	0.042	....	0.102	0.06	0.086	....	0.06	....	....	0.04	....
26	0.02	0.079	0.07	....	0.069	0.09	0.074	....	0.039	0.04	0.086	....	0.063	0.02	....	0.19	....	....	....
27	....	0.076	....	....	0.061	....	0.063	....	0.034	....	0.074	....	0.049	0.01	....	....	0.03	0.62	0.21
28	....	0.072	....	....	0.058	....	0.060	....	0.032	....	0.094	....	0.045	....	....	....	....	....	....
29	0.29	0.072	0.39	0.42	0.056	0.35	0.056	0.38	0.034	0.60	0.063	0.28	0.045	T	0.02	0.04	0.30	0.49	0.32
30	....	0.067	....	....	0.051	....	0.053	....	0.032	....	0.058	....	0.041	0.26	T	....	....	....	....
Total	4.59	4.16	5.04	5.11	3.71	5.93	4.55	6.36	3.21	6.96	4.92	4.77	4.03	6.48	5.45	7.86	6.62	7.13	5.19

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7						
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Urbana Rainfall in.	Tuscola Rainfall in.	Decatur Rainfall in.	Clinton Rainfall in.	Roberts Rainfall in.	Danville Rainfall in.
1927																		
May 1	....	0.047	....	....	0.049	....	0.048	....	0.029	....	0.053	....	0.029	....	....	....	....	....	....
2	....	0.039	....	....	0.046	....	0.048	....	0.029	....	0.049	....	0.029	....	....	....	....	....	....
3	....	0.036	....	....	0.044	....	0.039	....	0.026	....	0.044	....	0.029	....	T	0.07	....	T	....
4	....	0.034	....	....	0.042	....	0.042	....	0.023	....	0.040	....	0.029	T	....	T	....	....	....
5	....	0.034	....	....	0.037	....	0.039	....	0.023	....	0.035	....	0.029	....	....	....	....	....	....
6	....	0.034	....	....	0.037	....	0.039	....	0.023	....	0.031	....	0.029	....	....	....	....	....	....
7	0.41	0.036	0.70	0.70	0.040	0.26	0.039	0.86	0.023	0.36	0.028	....	0.029	....	....	....	....	....	....
8	....	0.071	....	....	0.049	....	0.044	....	0.029	....	0.042	....	0.029	....	1.42	0.93	0.63	0.25	2.36
9	1.46	0.119	1.09	1.17	0.114	1.68	0.085	1.25	0.061	0.91	0.062	1.57	0.043	1.36	0.92	0.16	0.25	1.09	0.07
10	....	0.133	....	....	0.154	....	0.122	....	0.123	....	0.127	....	0.045	0.20	0.16	0.88	0.95	0.03	0.81
11	....	0.086	....	....	0.086	0.02	0.085	0.05	0.065	0.02	0.116	0.02	0.035	T	0.02	0.01	0.06	T	0.03
12	0.03	0.057	....	....	0.063	....	0.063	....	0.045	....	0.095	....	0.029	0.01	T	0.03	....	....	....
13	....	0.049	0.05	0.05	0.056	0.04	0.056	....	0.038	0.02	0.077	0.01	0.029	....	0.05	0.01	0.06	T	0.05
14	0.04	0.044	....	....	0.056	....	0.051	0.07	0.032	....	0.062	0.03	0.029	0.01	0.06	0.04	0.02	T	0.03
15	....	0.041	....	....	0.051	....	0.048	....	0.029	....	0.051	....	0.029	0.02	....	0.05	0.04	T	....
16	....	0.039	....	....	0.046	....	0.039	....	0.028	....	0.044	....	0.029	....	....	T	....	....	....
17	....	0.039	....	....	0.044	....	0.039	....	0.026	....	0.038	....	0.029	....	....	....	0.06	....	....
18	1.57	0.047	1.18	1.16	0.069	1.24	0.056	1.33	0.029	1.24	0.038	1.43	0.047	0.46	0.55	0.57	1.19	5.05	0.76
19	....	0.180	....	....	0.148	....	0.169	....	0.065	....	0.051	....	0.136	1.02	0.94	0.79	0.02	0.10	0.73
20	....	0.153	....	....	0.080	....	0.112	....	0.042	....	0.047	....	0.094	....	....	T	....	....	....
21	....	0.109	....	....	0.061	....	0.078	....	0.032	....	0.040	....	0.063	....	....	....	....	....	....
22	0.24	0.089	0.16	0.16	0.051	0.11	0.063	0.13	0.029	0.23	0.032	0.12	0.049	0.01	0.05	0.05	0.21	0.05	0.04
23	0.47	0.071	0.34	0.38	0.058	0.47	0.063	0.66	0.029	0.70	0.030	0.42	0.114	0.12	1.02	0.07	0.58	0.71	0.78
24	0.65	0.077	0.72	0.77	0.120	0.72	0.112	1.19	0.042	0.85	0.030	0.80	0.178	0.46	1.35	0.88	0.76	0.75	0.83
25	....	0.083	....	....	0.173	....	0.180	....	0.105	....	0.090	....	0.451	0.67	1.05	1.07	0.06	T	0.63
26	....	0.083	....	....	0.108	....	0.131	....	0.068	....	0.104	....	0.201	....	....	0.55	....	....	....
27	0.36	0.086	0.38	0.39	0.099	0.62	0.102	0.40	0.048	0.31	0.078	0.32	0.153	....	0.47	....	0.69	0.18	0.60
28	0.09	0.105	0.17	0.15	0.096	0.18	0.107	0.61	0.063	0.18	0.086	0.18	0.160	0.28	0.25	0.92	0.05	0.13	0.04
29	0.27	0.102	0.12	0.11	0.074	0.18	0.090	0.15	0.078	0.13	0.090	0.21	0.208	0.20	1.87	0.47	0.30	0.10	0.22
30	....	0.089	....	....	0.086	....	0.090	0.06	0.120	0.13	0.079	0.05	0.212	0.19	0.57	0.28	0.05	....	0.60
31	....	0.083	....	....	0.058	....	0.078	....	0.116	....	0.066	....	0.156	....	0.12	0.03	....	....	....
Total	5.59	2.30	4.91	5.04	2.30	5.52	2.36	6.76	1.52	5.08	1.85	5.16	2.75	5.01	10.87	7.86	5.98	8.44	8.58

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1927																			
June 1	....	0.089	....	....	0.053	....	0.067	....	0.046	....	0.055	....	0.130	....	....	....	....	....	....
2	1.10	0.095	1.01	1.07	0.086	1.37	0.102	1.16	0.052	1.00	0.049	0.98	0.123	0.20	0.85	0.29	0.52	0.60	0.63
3	0.54	0.176	0.50	0.53	0.182	0.50	0.228	0.24	0.096	0.15	0.079	0.35	0.153	0.80	0.18	0.41	0.32	0.48	0.28
4	....	0.141	....	....	0.216	....	0.236	....	0.107	....	0.094	....	0.153	0.36	0.27	0.52	....	....	0.20
5	....	0.112	....	....	0.130	....	0.175	....	0.071	....	0.079	....	0.144	....	....	....	....	....	....
6	....	0.083	....	....	0.093	....	0.131	....	0.045	....	0.060	....	0.141	....	....	....	....	....	....
7	....	0.077	....	....	0.077	....	0.102	....	0.038	....	0.052	....	0.133	....	....	....	....	....	....
8	....	0.068	....	....	0.066	....	0.082	....	0.034	....	0.044	....	0.111	....	....	....	....	....	....
9	....	0.062	....	....	0.058	....	0.070	....	0.029	....	0.038	....	0.089	....	....	....	....	....	....
10	....	0.060	....	....	0.053	....	0.063	....	0.026	....	0.032	....	0.071	....	T	....	....	....	....
11	....	0.057	....	....	0.051	....	0.060	....	0.023	....	0.028	....	0.077	....	T	....	0.05	....	....
12	1.12	0.057	0.74	0.77	0.049	0.88	0.056	0.91	0.030	0.48	0.027	0.81	0.130	0.74	0.86	1.00	1.37	0.65	0.80
13	0.47	0.055	0.55	0.55	0.056	0.61	0.082	0.76	0.038	0.85	0.034	0.52	0.150	0.09	0.58	0.24	0.83	0.26	0.56
14	....	0.052	....	....	0.058	....	0.099	....	0.042	....	0.055	....	0.136	0.42	0.02	0.72	....	....	0.03
15	....	0.049	....	....	0.051	....	0.078	....	0.036	....	0.048	....	0.097	....	....	T	....	....	....
16	....	0.049	....	....	0.046	....	0.067	....	0.029	....	0.043	....	0.092	....	T	....	....	....	....
17	0.43	0.047	0.68	0.59	0.046	0.42	0.063	0.88	0.029	0.80	0.036	1.06	0.097	T	0.54	....	....	....	0.07
18	....	0.039	....	....	0.044	....	0.056	....	0.040	....	0.085	....	0.360	0.95	0.99	0.25	....	0.25	0.97
19	....	0.036	....	....	0.040	....	0.056	....	0.032	....	0.089	....	0.136	....	....	....	....	....	....
20	....	0.039	....	....	0.037	....	0.051	....	0.028	....	0.067	....	0.100	T	T	....	....	....	....
21	1.76	0.180	1.61	1.48	0.099	1.66	0.175	1.53	0.087	1.84	0.123	2.23	0.136	1.42	0.87	1.22	0.55	0.75	2.43
22	....	0.149	....	....	0.083	....	0.203	....	0.123	....	0.182	....	0.144	0.88	....	0.60	T	....	....
23	....	0.109	....	....	0.058	....	0.141	....	0.068	....	0.140	....	0.114	T	0.02	T	....	....	....
24	....	0.089	....	....	0.051	....	0.107	....	0.042	....	0.107	....	0.097	....	....	....	....	....	....
25	....	0.074	....	....	0.046	....	0.082	....	0.029	....	0.084	....	0.097	....	0.08	....	....	....	0.12
26	....	0.055	....	....	0.040	....	0.063	....	0.026	....	0.063	....	0.086	0.01	....	....	....	....	....
27	....	0.028	....	....	0.037	....	0.054	....	0.023	....	0.050	....	0.069	....	....	....	....	....	....
28	....	0.022	....	....	0.035	....	0.048	....	0.023	....	0.039	....	0.049	....	....	....	....	....	....
29	....	0.020	....	....	0.033	....	0.042	....	0.019	....	0.029	....	0.031	....	....	....	....	....	....
30	....	0.017	....	....	0.031	....	0.036	....	0.018	....	0.021	....	0.029	....	....	....	....	....	....
Total	5.42	2.19	5.09	4.99	2.00	5 44	2.87	5.48	1.33	5.12	1.93	5.95	3.48	5.87	5.26	5.25	3.64	2.99	6.09

TABLE 5—*Continued*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1927																			
July 1	0.03	0.017	....	....	0.031	0.01	0.012	0.04	0.016	0.11	0.019	0.06	0.029	T	T	....	....	T	....
2	....	0.015	....	....	0.028	....	0.010	....	0.016	0.02	0.018	....	0.029	T	T	0.28	0.16	....	0.02
3	....	0.015	....	....	0.026	....	0.008	....	0.016	....	0.017	....	0.029	....	....	....	....	....	....
4	....	0.015	....	....	0.026	....	0.007	....	0.016	....	0.017	....	0.029	....	....	....	....	....	....
5	....	0.013	....	....	0.024	....	0.006	....	0.014	....	0.017	....	0.029	....	....	....	....	T	....
6	0.25	0.013	0.23	0.22	0.022	0.46	0.004	0.18	0.013	0.07	0.016	0.35	0.029	....	....	T	....	T	....
7	....	0.013	....	....	0.022	....	0.002	....	0.013	....	0.016	....	0.029	0.38	0.08	0.64	0.58	0.25	0.08
8	....	0.013	....	....	0.022	....	0.002	0.04	0.012	0.06	0.016	....	0.029	....	....	....	....	....	....
9	0.10	0.012	0.19	0.21	0.022	0.21	0.002	0.27	0.012	0.36	0.016	0.09	0.028	....	....	....	....	....	....
10	....	0.012	....	....	0.022	....	0.002	....	0.010	....	0.016	....	0.014	0.07	0.04	0.15	0.26	....	0.03
11	0.04	0.012	0.02	0.03	0.020	....	0.002	0.15	0.010	0.07	0.016	0.01	0.012	....	....	....	....	T	....
12	....	0.010	....	....	0.020	....	0.002	....	0.010	....	0.016	....	0.012	0.02	0.02	0.03	....	T	....
13	2.28	0.052	4.31	4.09	0.096	1.09	0.004	1.25	0.010	2.67	0.020	2.71	0.086	....	0.85	....	....	1.05	0.36
14	1.78	0.322	1.17	1.15	0.467	1.75	0.074	1.32	0.016	1.22	0.059	1.76	0.246	2.68	0.38	0.28	2.75	1.27	0.05
15	....	0.219	....	....	0.318	....	0.107	....	0.036	....	0.117	....	0.632	1.77	....	1.76	T	....	1.84
16	0.85	0.164	0.41	0.56	0.161	1.08	0.063	0.31	0.026	0.44	0.107	0.26	0.141	....	....	....	....	....	....
17	....	0.281	....	....	0.362	....	0.172	....	0.019	....	0.088	....	0.097	0.25	0.04	....	0.25	0.03	1.41
18	....	0.205	....	....	0.167	....	0.092	....	0.016	....	0.070	....	0.097	....	....	....	....	....	....
19	0.15	0.122	0.05	0.06	0.102	0.11	0.056	0.04	0.016	0.02	0.052	0.04	0.097	0.05	T	0.13	....	0.17	0.12
20	....	0.080	....	....	0.080	....	0.042	....	0.013	....	0.040	....	0.111	T	....	0.20	....	....	0.23
21	0.78	0.062	0.44	0.52	0.069	0.77	0.034	0.50	0.013	0.49	0.032	0.54	0.150	....	0.85	....	0.94	....	0.54
22	....	0.052	....	....	0.086	....	0.042	....	0.012	....	0.024	....	0.108	0.45	0.13	1.45	T	0.25	....
23	....	0.044	....	....	0.069	....	0.034	....	0.010	....	0.017	....	0.071	....	....	T	....	T	....
24	....	0.034	....	....	0.053	....	0.024	....	0.010	....	0.014	....	0.061	....	....	....	....	....	....
25	....	0.034	....	....	0.049	....	0.018	....	0.010	....	0.014	....	0.035	....	....	....	0.03	....	....
26	....	0.032	....	....	0.044	....	0.016	....	0.010	....	0.014	....	0.029	....	T	0.02	....	T	....
27	....	0.032	....	....	0.040	....	0.014	....	0.010	....	0.014	....	0.029	....	....	....	....	....	....
28	....	0.030	....	....	0.037	....	0.011	....	0.008	....	0.012	....	0.029	....	....	....	....	....	....
29	0.17	0.028	0.11	0.13	0.037	0.22	0.012	....	0.008	....	0.011	0.14	0.029	0.10	T	0.02	0.21	....	....
30	0.44	0.028	0.08	0.15	0.035	0.10	0.015	0.70	0.010	0.38	0.011	0.20	0.029	0.21	1.10	0.38	0.05	T	0.50
31	....	0.030	....	....	0.035	....	0.011	....	0.010	....	0.011	....	0.029	0.04	....	0.74	....	....	....
Total	6.87	2.01	7.01	7.12	2.59	5.80	0.90	4.80	0.42	5.91	0.93	6.16	2.40	6.02	3.49	6.08	5.23	3.02	5.18

TABLE 5—*Continued*

RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Runoff in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1927																			
Aug. 1	....	0.028	....	....	0.033	....	0.008	....	0.006	....	0.008	....	0.029	....	0.03	0.18	....	T	....
2	0.06	0.028	0.10	0.10	0.033	0.13	0.006	0.04	0.006	0.03	0.008	0.09	0.029	....	0.08	....	0.05	0.02	....
3	....	0.028	....	....	0.028	....	0.004	....	0.006	....	0.007	....	0.029	0.12	....	0.06	0.10	T	0.08
4	....	0.026	....	....	0.026	....	0.004	....	0.006	....	0.006	....	0.029	....	....	....	....	....	....
5	....	0.023	....	....	0.022	....	0.002	....	0.006	....	0.006	....	0.029	....	....	....	....	....	....
6	0.03	0.022	0.03	....	0.018	....	0.002	0.47	0.006	0.10	0.006	0.13	0.029	....	0.07	....	1.25	T	0.03
7	1.73	0.137	1.34	1.19	0.122	1.41	0.099	0.04	0.006	0 10	0.005	2.43	0.029	0.13	0.29	0.52	0.20	0.50	0.12
8	....	0.261	....	....	0.204	0.02	0.348	....	0.006	0.04	0.004	....	0.029	2.71	0.28	0.63	0.04	0.04	....
9	....	0.035	....	....	0.077	....	0.097	0.13	0.006	....	0.004	....	0.029	....	0.33	0.34	....	....	....
10	....	0.052	....	....	0.058	....	0.054	....	0.004	....	0.004	....	0.029	....	....	....	....	....	....
11	....	0.032	....	....	0.046	....	0.036	....	0.003	....	0.004	....	0.029	....	....	....	....	....	....
12	....	0.028	0.08	0.06	0.037	....	0.024	0.10	0.003	0.23	0.004	0.02	0.029	....	0.44	....	0.60	0.50	....
13	0.70	0.060	1.06	1.04	0.085	1.04	0.019	1.92	0.008	1.32	0.004	1.36	0.059	T	0.98	1.00	0.82	0.20	0.21
14	0.03	0.077	0.06	0.04	0.080	....	0.024	....	0.024	....	0.018	....	0.106	1.29	0.39	1.61	0.06	0.04	0.92
15	....	0.068	....	....	0.049	....	0.017	....	0.016	....	0.020	....	0.086	0.01	....	....	....	....	....
16	0.18	0.057	0.15	0.19	0.044	....	0.012	....	0.010	....	0.013	....	0.063	....	....	....	0.02	T	....
17	....	0.039	....	....	0.042	0.16	0.008	0.23	0.010	0.11	0.010	0.17	0.049	0.15	0.67	0.30	0.13	0.15	0.25
18	....	0.022	....	....	0.037	....	0.006	....	0.008	....	0.008	....	0.049	T	....	0.08	....	0.07	....
19	....	0.013	....	....	0.035	....	0.005	....	0.006	....	0.008	....	0.035	....	T	....	....	....	....
20	....	0.013	....	....	0.033	....	0.004	....	0.006	....	0.007	....	0.029	....	T	....	....	....	....
21	....	0.010	....	....	0.033	....	0.002	....	0.006	....	0.006	....	0.029	....	....	....	....	....	....
22	....	0.008	....	....	0.031	....	0.002	....	0.006	....	0.006	....	0.029	....	....	....	....	....	....
23	0.40	0.008	0.29	0.31	0.028	0.31	0.002	0.75	0.006	0.28	0.006	0.41	0.035	....	0.87	....	0.31	0.50	0.35
24	....	0.008	....	....	0.026	....	0.002	....	0.006	....	0.005	....	0.039	0.38	....	0.98	....	....	....
25	....	0.007	....	....	0.024	....	0.002	....	0.006	....	0.004	....	0.029	....	....	....	....	....	....
26	....	0.008	....	....	0.024	....	0.001	....	0.006	....	0.004	....	0.029	....	....	....	....	....	....
27	....	0.008	....	....	0.022	....	0.000	....	0.006	....	0.004	....	0.029	....	....	....	....	....	....
28	....	0.010	....	....	0.022	....	0.000	....	0.006	....	0.004	....	0.029	....	....	....	....	....	....
29	....	0.012	....	....	0.020	....	0.000	....	0.004	....	0.002	....	0.029	....	....	....	....	....	....
30	....	0.010	....	....	0.020	....	0.000	....	0.004	0.02	0.002	....	0.029	....	T	....	....	....	....
31	....	0.010	....	....	0.018	....	0.000	....	0.003	....	0.002	....	0.029	....	....	....	....	....	....
Total	3.13	1.21	3.11	2.93	1.38	3.07	0.79	3.68	0.21	2.23	0.20	4.61	1.16	4.79	4.43	5.70	3.58	2.02	1.96

TABLE 5—*Concluded*
RAINFALL AND RUN-OFF DATA

Date	Watersheds												U. S. Weather Bureau Stations					
	No. 1		No. 2	No. 3		No. 4		No. 5		No. 6		No. 7		Urbana	Tuscola	Decatur	Clinton	Roberts	Danville
	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Run-off in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.	Rainfall in.
1927																			
Sept. 1	....	0.010	....	....	0.018	....	0.000	....	0.003	....	0.002	....	0.029	....	....	....	....	....	....
2	....	0.010	....	....	0.018	....	0.000	....	0.003	....	0.002	....	0.029	....	....	....	....	....	....
3	....	0.010	....	....	0.018	....	0.000	....	0.003	....	0.002	....	0.026	....	....	....	....	....	....
4	....	0.010	....	....	0.015	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
5	....	0.010	....	....	0.015	....	0.000	....	0.003	....	0.001	....	0.000	....	T	....	....	T	....
6	....	0.010	....	....	0.015	....	0.000	....	0.003	....	0.001	....	0.000	....	....	....	....	....	....
7	0.70	0.010	0.62	0.61	0.013	0.54	0.000	1.12	0.003	1.30	0.001	0.96	0.000	0.55	0.75	0.03	0.16	1.05	0.21
8	0.14	0.010	0.22	0.23	0.013	0.24	0.000	0.19	0.003	0.08	0.001	0.27	0.000	0.70	0.25	2.42	1.85	T	....
9	....	0.010	....	....	0.013	....	0.000	....	0.003	....	0.001	....	0.000	T	0.11	0.57	0.21	....	0.22
10	0.31	0.010	0.47	0.45	0.013	0.28	0.001	0.41	0.003	0.62	0.002	0.38	0.000	....	....	....	....	T	0.90
11	....	0.010	....	....	0.013	....	0.000	....	0.006	....	0.002	....	0.000	0.40	0.06	....	....	....	....
12	....	0.010	....	....	0.013	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
13	....	0.010	....	....	0.013	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
14	....	0.010	....	....	0.013	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
15	....	0.010	....	....	0.013	....	0.000	....	0.003	....	0.002	....	0.000	....	....	....	....	....	....
16	....	0.010	....	....	0.013	....	0.000	....	0.003	....	0.001	....	0.000	....	....	....	....	....	....
17	....	0.010	....	....	0.013	....	0.000	....	0.003	....	0.001	....	0.000	....	....	T	....	T	....
18	....	0.006	....	....	0.011	....	0.000	....	0.003	....	0.000	....	0.000	....	....	....	....	....	....
19	....	0.006	....	....	0.011	....	0.000	....	0.003	....	0.000	....	0.000	....	....	T	....	....	....
20	0.05	0.004	0.07	0.09	0.011	0.14	0.000	0.26	0.003	0.18	0.000	0.02	0.000*	....	0.08	0.17	0.20	0.25	0.09
21	....	0.004	....	....	0.011	....	0.000	....	0.003	....	0.000	....		....	....	....	....	....	....
22	....	0.004	....	....	0.011	....	0.000	....	0.003	....	0.000	....		....	T	....	....	T	....
23	....	0.002	....	....	0.011	....	0.000	....	0.003	....	0.000	....		T	....	....	....	....	....
24	....	0.002	....	....	0.009	....	0.000	....	0.003	....	0.000	....		....	....	T	....	T	....
25	....	0.002	....	....	0.009	....	0.000	....	0.003	....	0.000	....		....	....	T	0.03	T	....
26	....	0.002	....	....	0.009	....	0.000	....	0.003	....	0.000	....		....	....	....	....	....	....
27	0.60	0.002	0.45	0.33	0.009	0.23	0.000	0.45	0.003	0.42	0.000	1.00		0.78	....	0.20	0.41	0.95	0.19
28	1.25	0.002	1.29	1.29	0.009	1.17	0.000	1.09	0.003	1.00	0.002	1.23		1.49	1.44	1.00	1.41	1.70	0.62
29	2.52	0.008	2.46	2.49	0.061	1.95	0.024	1.42	0.010	1.12	0.008	2.18		2.35	1.97	0.13	1.63	1.35	2.32
30	0.60	0.156	0.78	0.64	0.287	0.40	0.167	0.22	0.065	1.02	0.065	0.87		0.86	0.34	2.31	0.26	0.15	....
Total	6.17	0.37	6.36	6.13	0.71	4.95	0.19	6.16	0.16	5.74	0.10	6.91		7.13	5.00	6.83	6.16	5.45	4.55

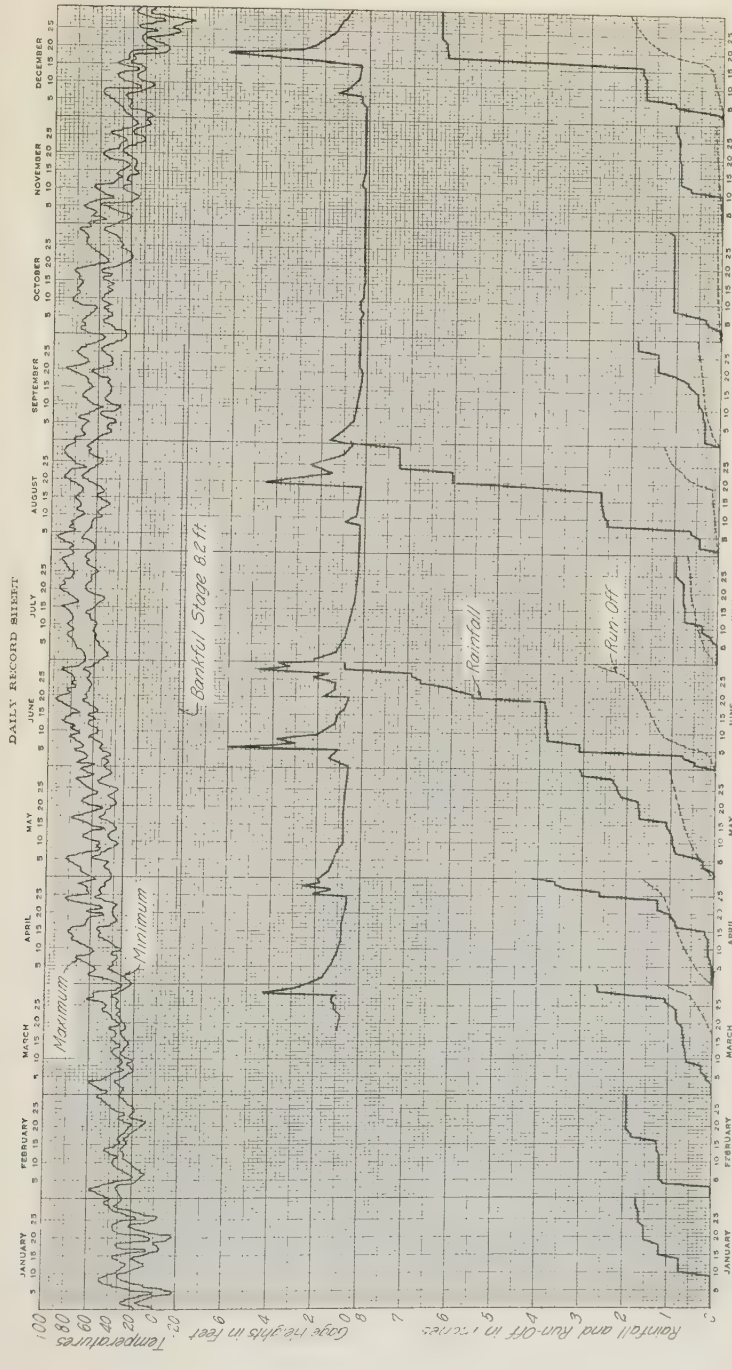


FIG. 7. HYDROLOGIC DATA FOR WATERSHED NO. 1 FOR 1924

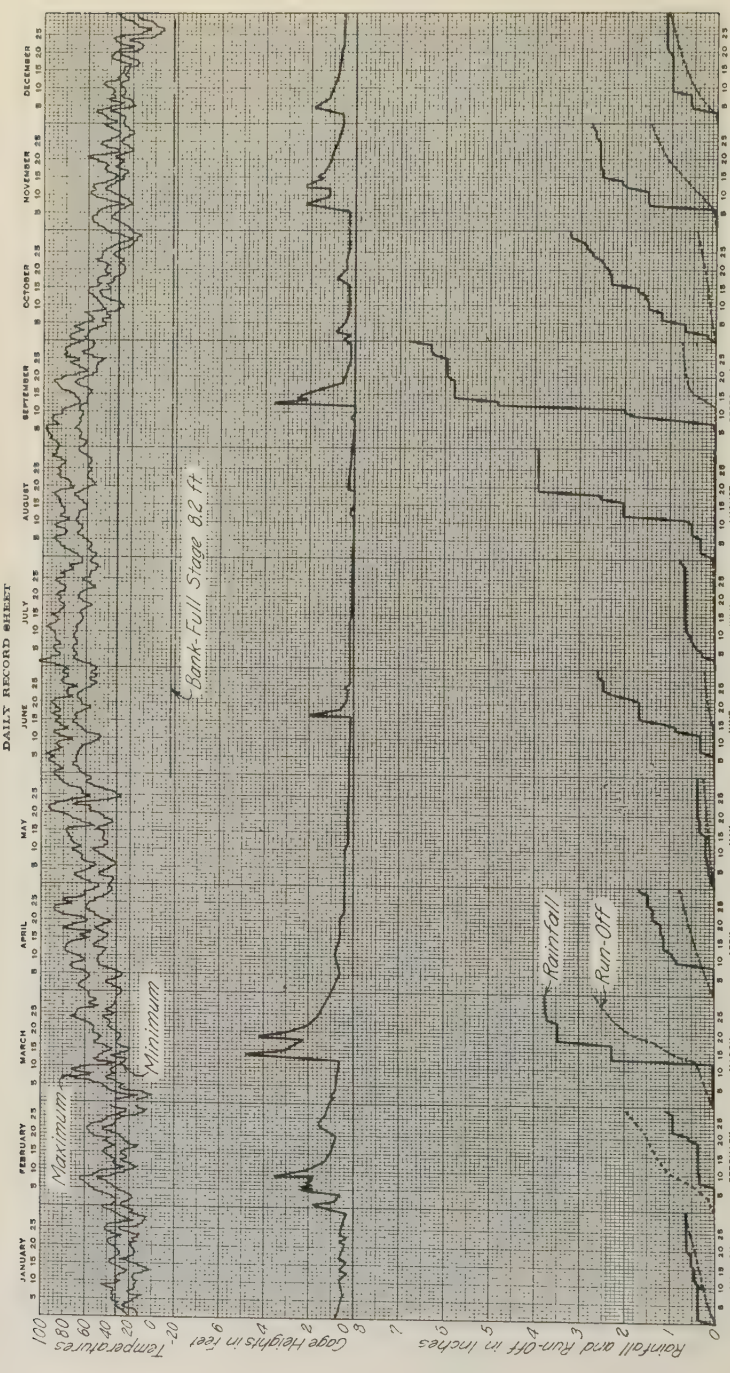


FIG. 8. HYDROLOGIC DATA FOR WATERSHED NO. 1 FOR 1925

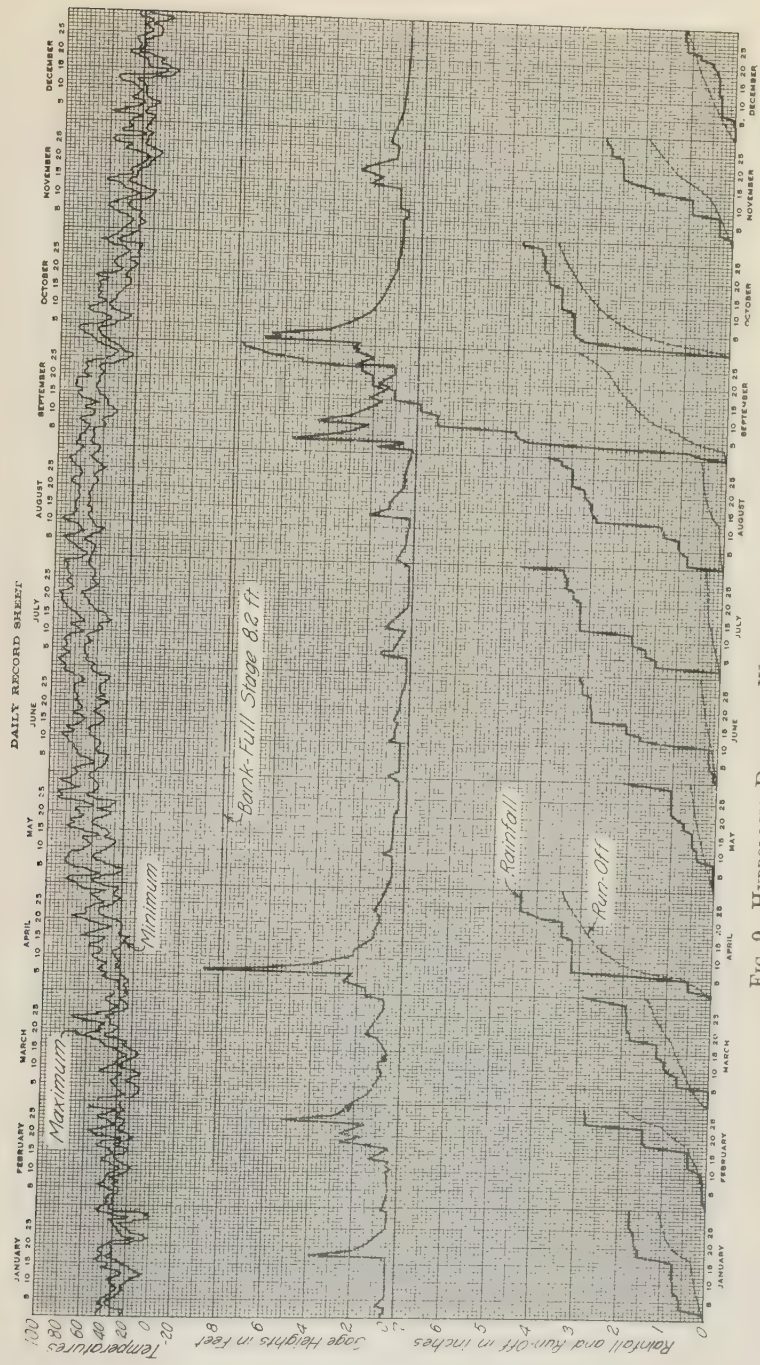


FIG. 9. HYDROLOGIC DATA FOR WATERSHED NO. 1 FOR 1926

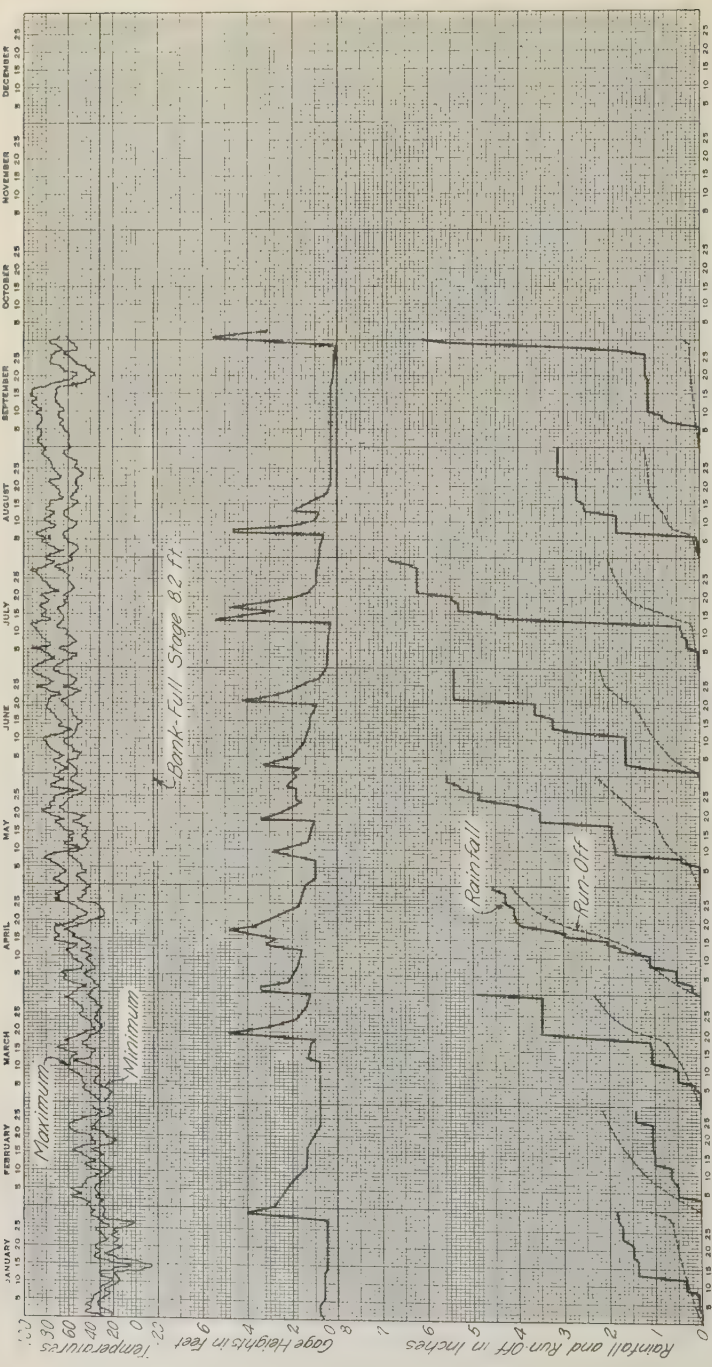


FIG. 10. HYDROLOGIC DATA FOR WATERSHED NO. 1 FOR 1927

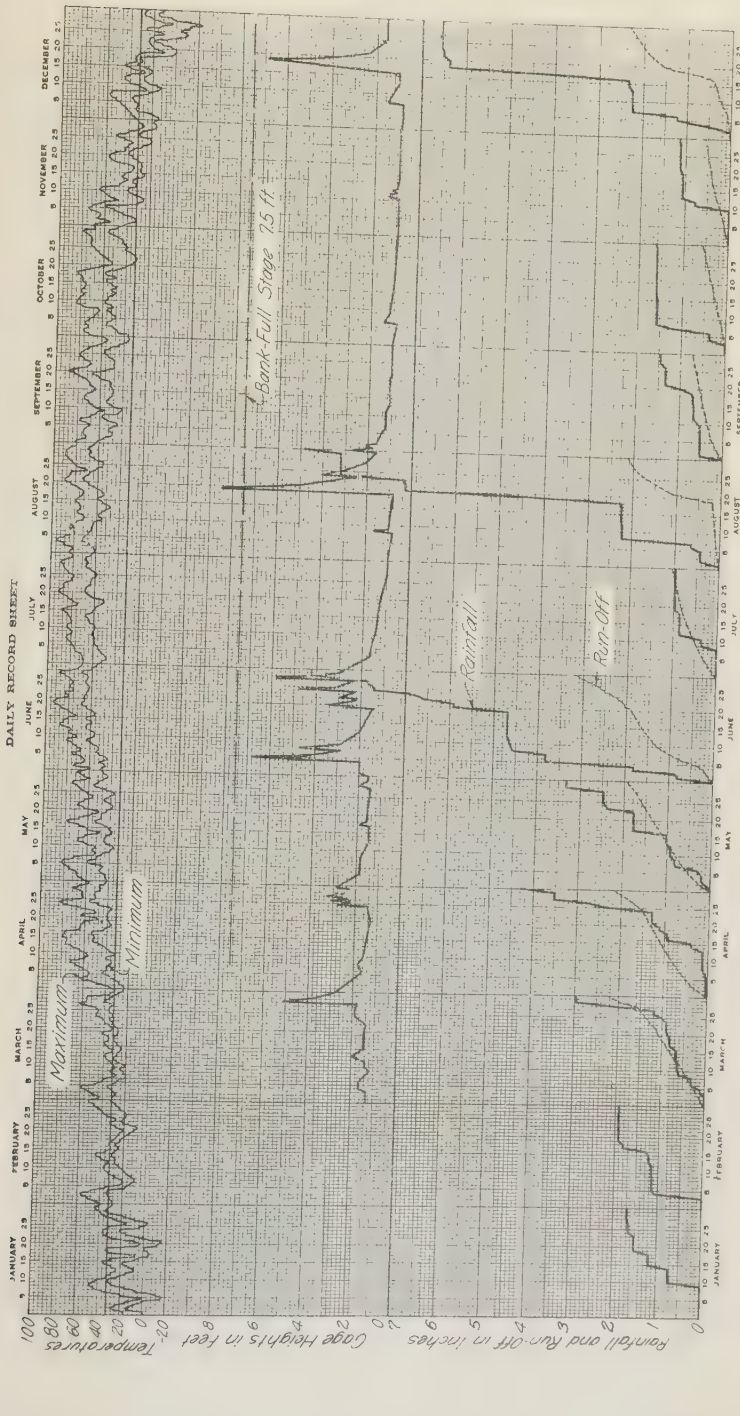


FIG. 11. HYDROLOGIC DATA FOR WATERSHED NO. 3 FOR 1924

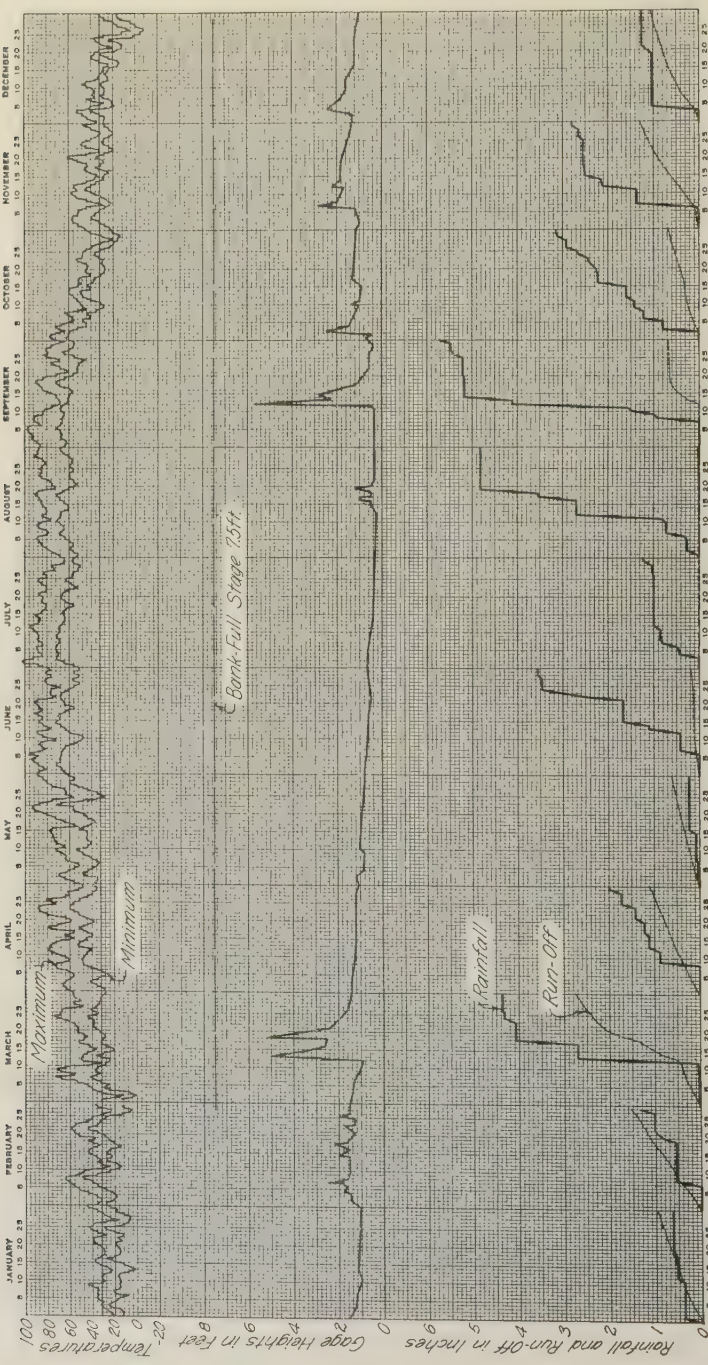


FIG. 12. HYDROLOGIC DATA FOR WATERSHED NO. 3 FOR 1925

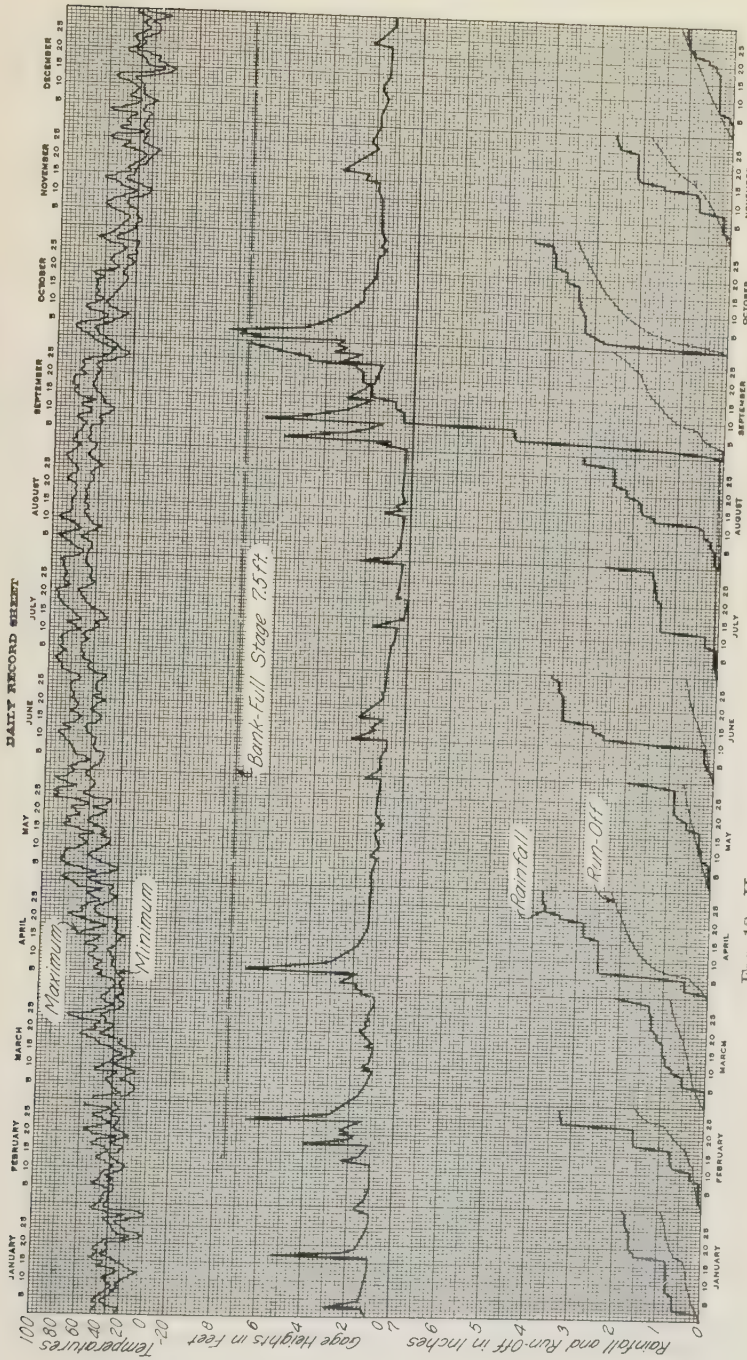


FIG. 13. HYDROLOGIC DATA FOR WATERSHED NO. 3 FOR 1926

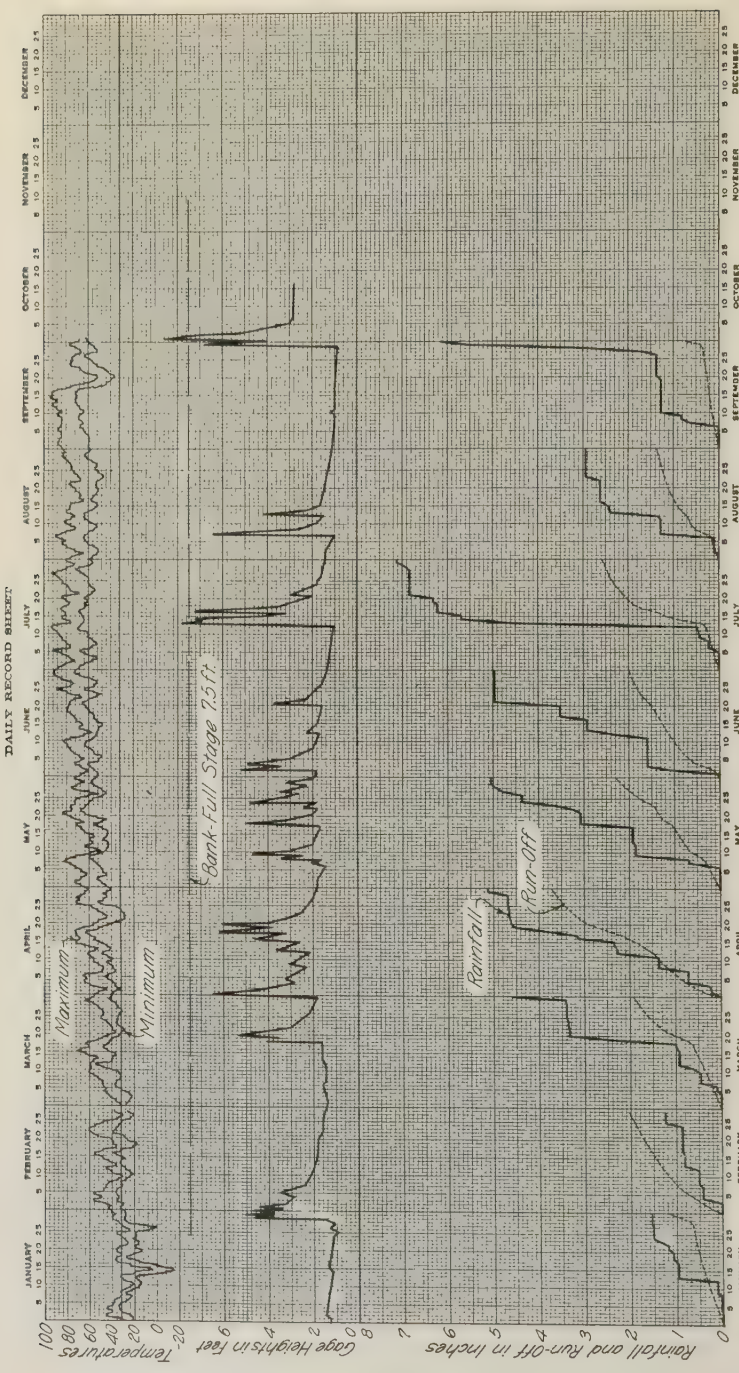


FIG. 14. HYDROLOGIC DATA FOR WATERSHED NO. 3 FOR 1927

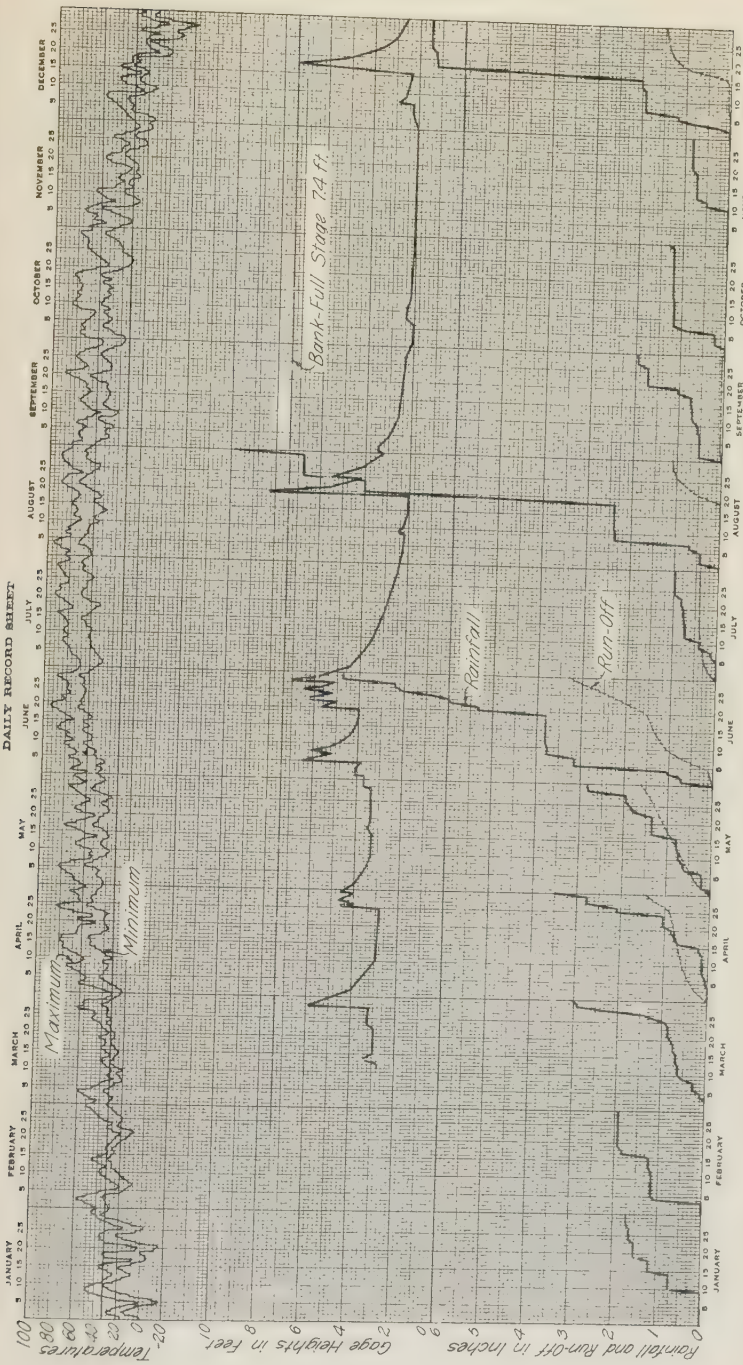


FIG. 15. HYDROLOGIC DATA FOR WATERSHED NO. 4 FOR 1924

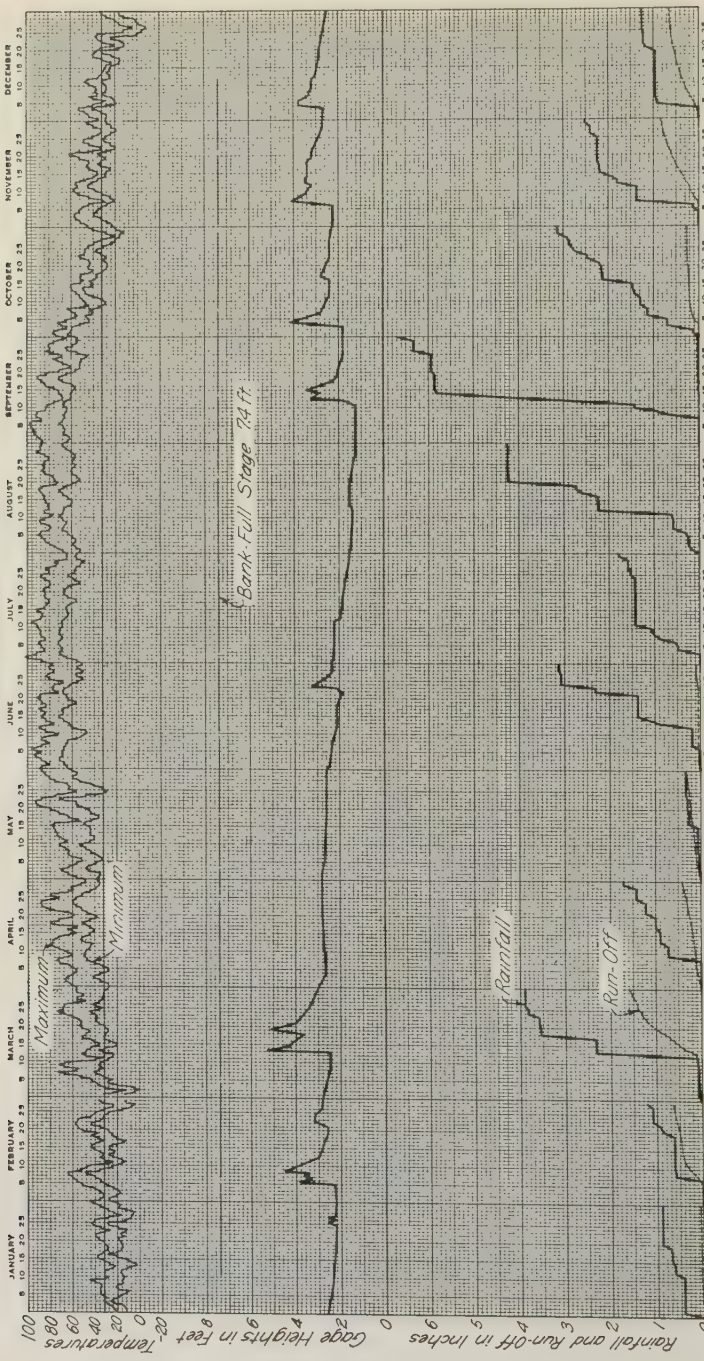


FIG. 16. HYDROLOGIC DATA FOR WATERSHED NO. 4 FOR 1925

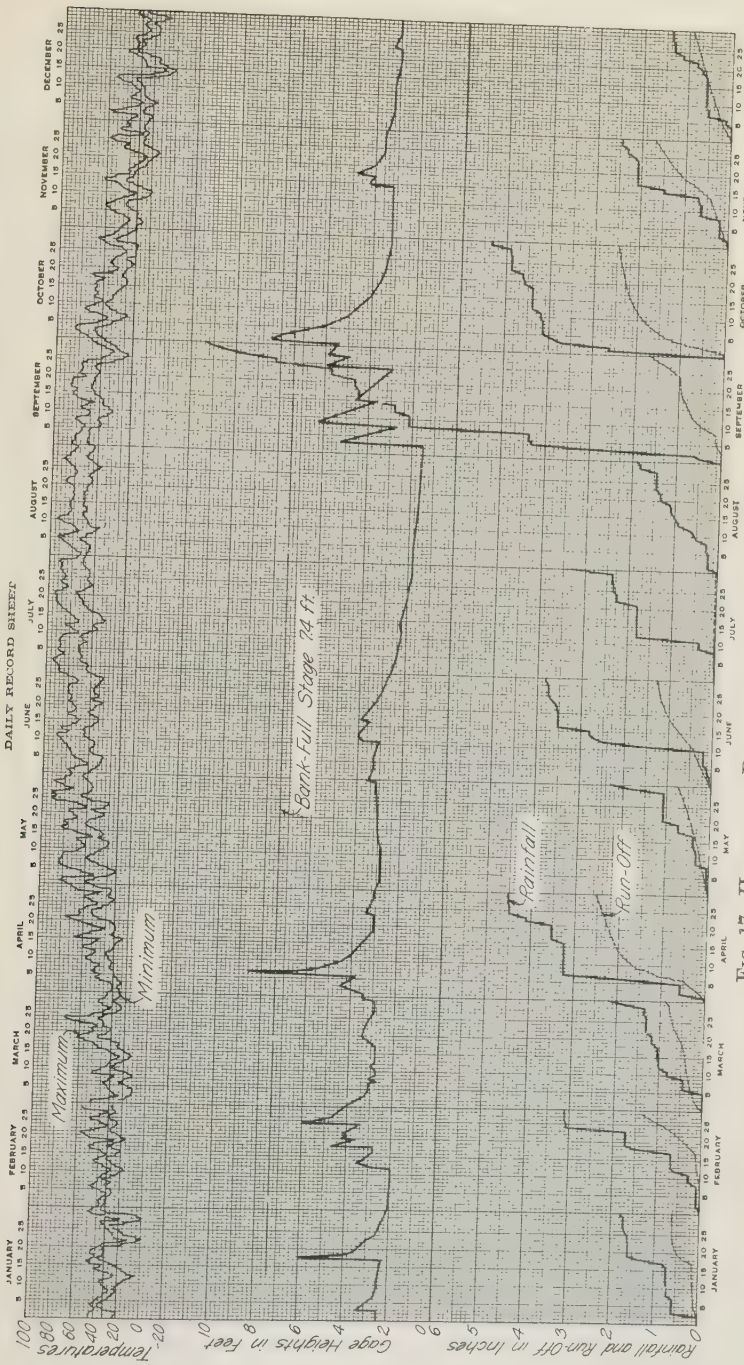


FIG. 17. HYDROLOGIC DATA FOR WATERSHED NO. 4 FOR 1926

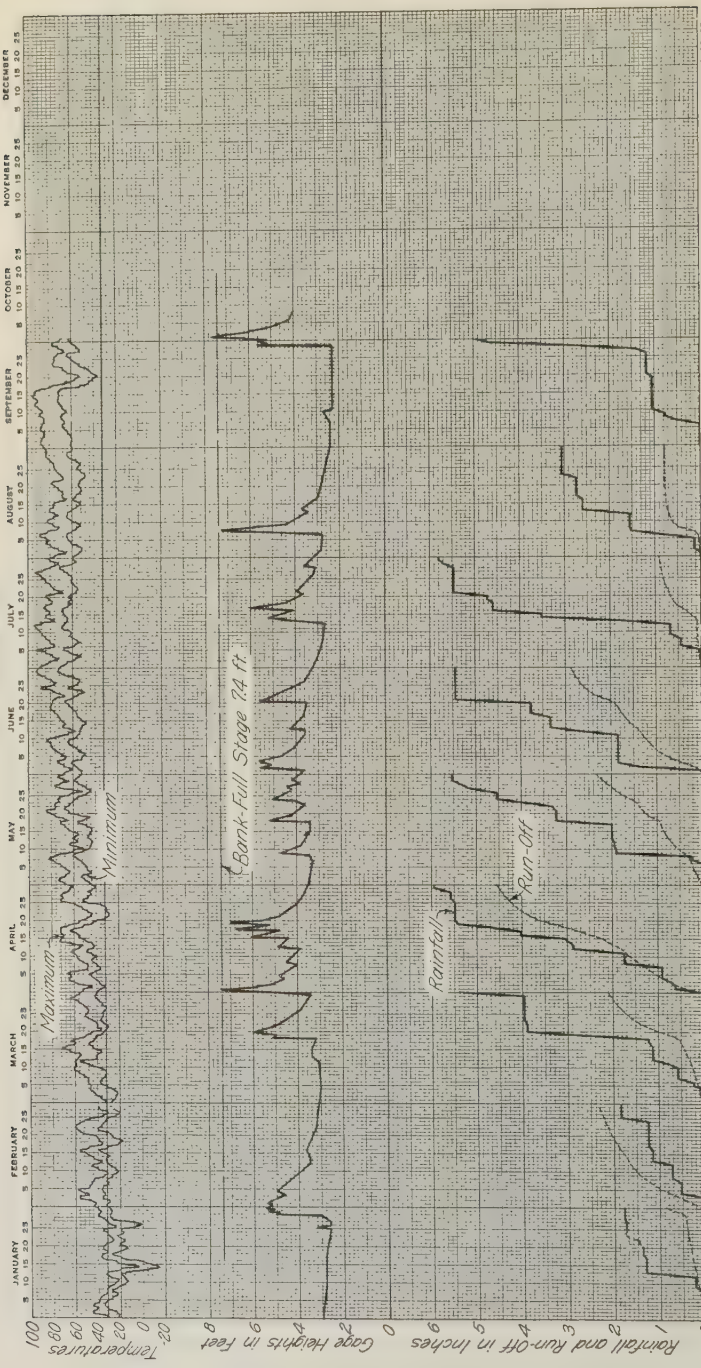


FIG. 18. HYDROLOGIC DATA FOR WATERSHED NO. 4 FOR 1927

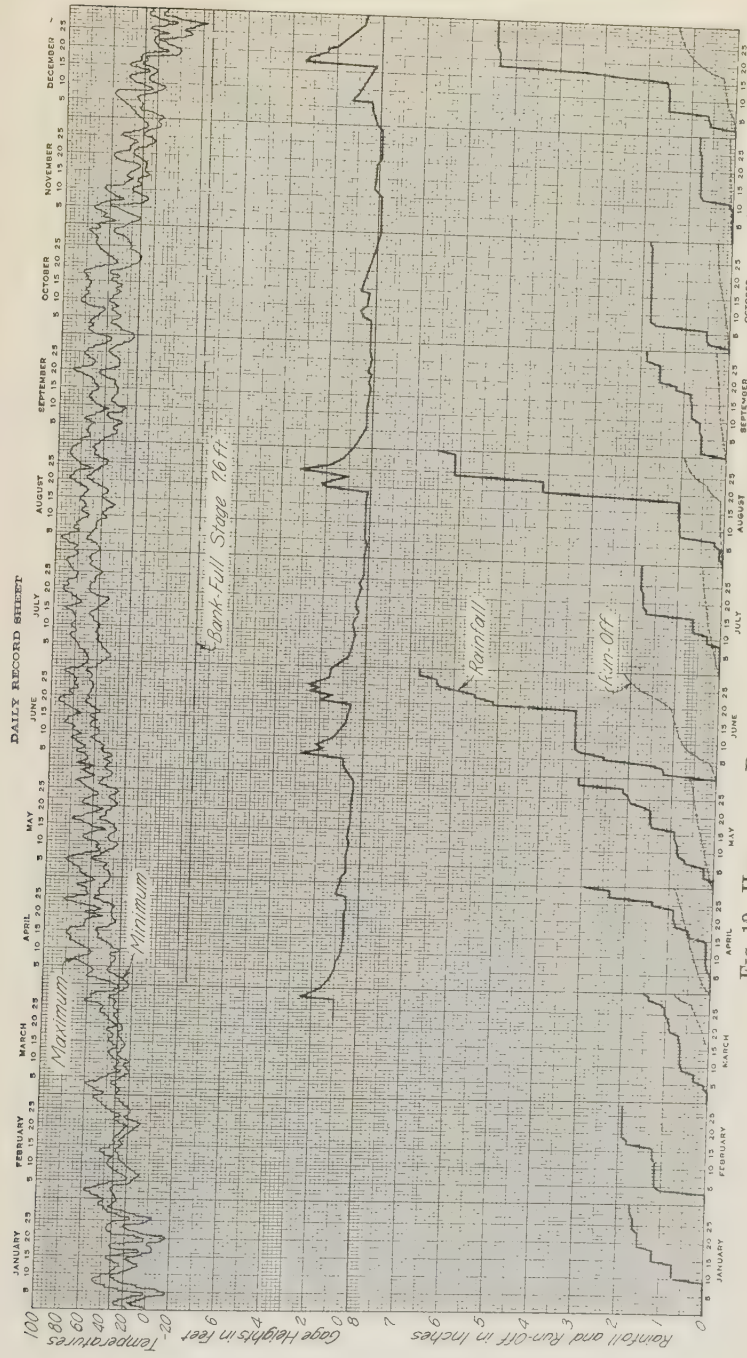


FIG. 19. HYDROLOGIC DATA FOR WATERSHED NO. 5 FOR 1924

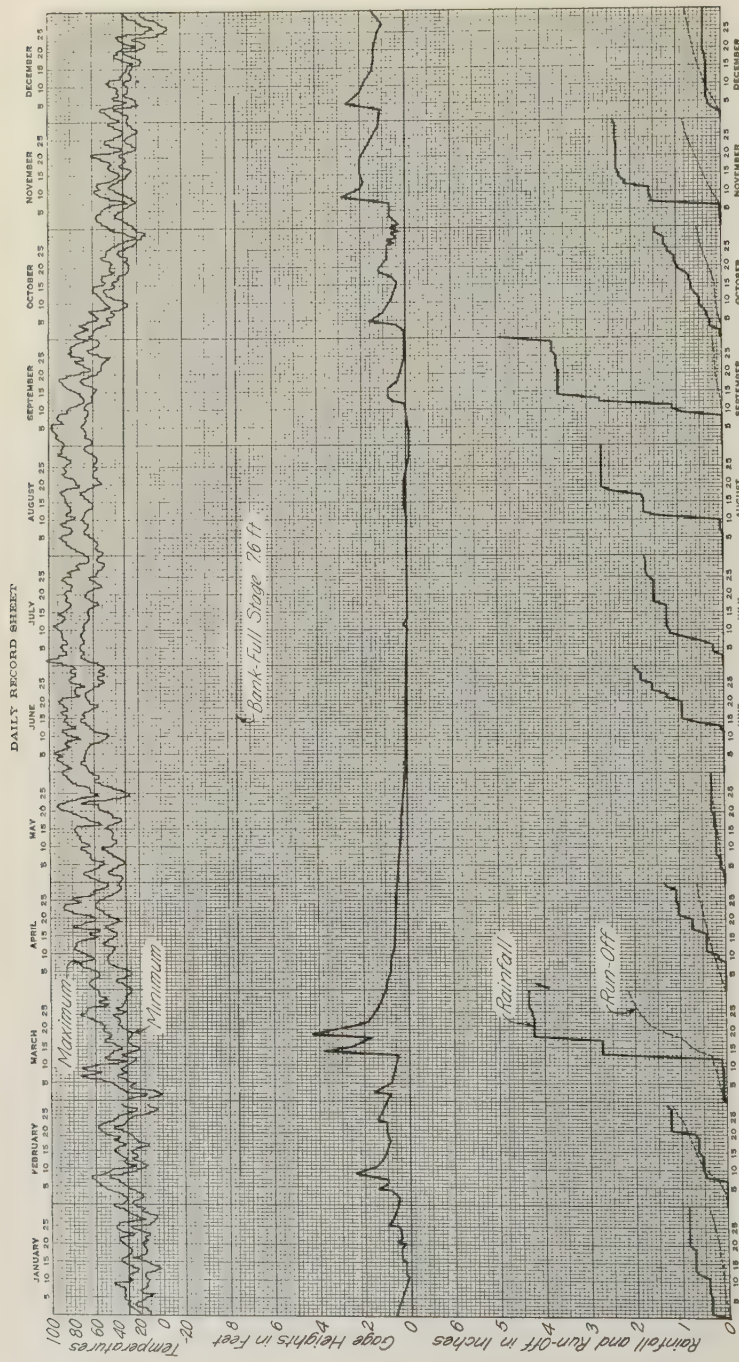


FIG. 20. HYDROLOGIC DATA FOR WATERSHED NO. 5 FOR 1925

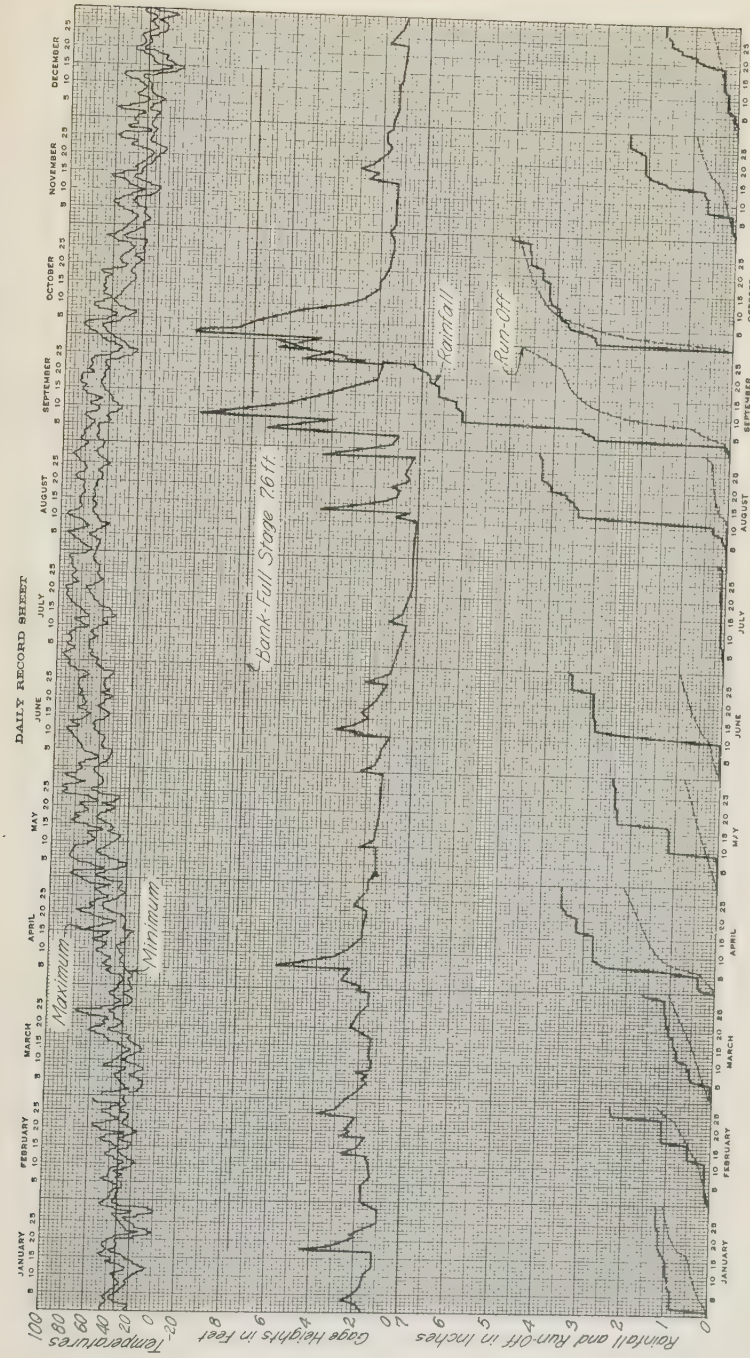


FIG. 21. HYDROLOGIC DATA FOR WATERSHED NO. 5 FOR 1926

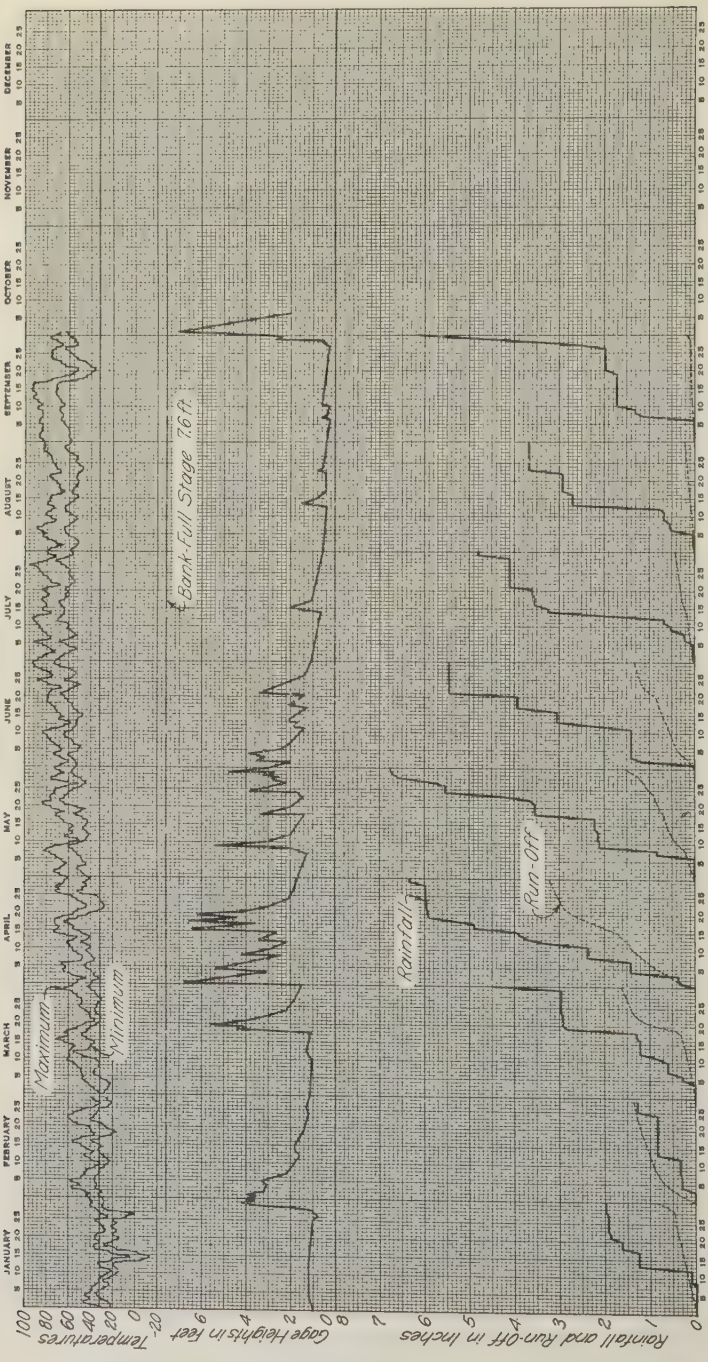


FIG. 22. HYDROLOGIC DATA FOR WATERSHED NO. 5 FOR 1927

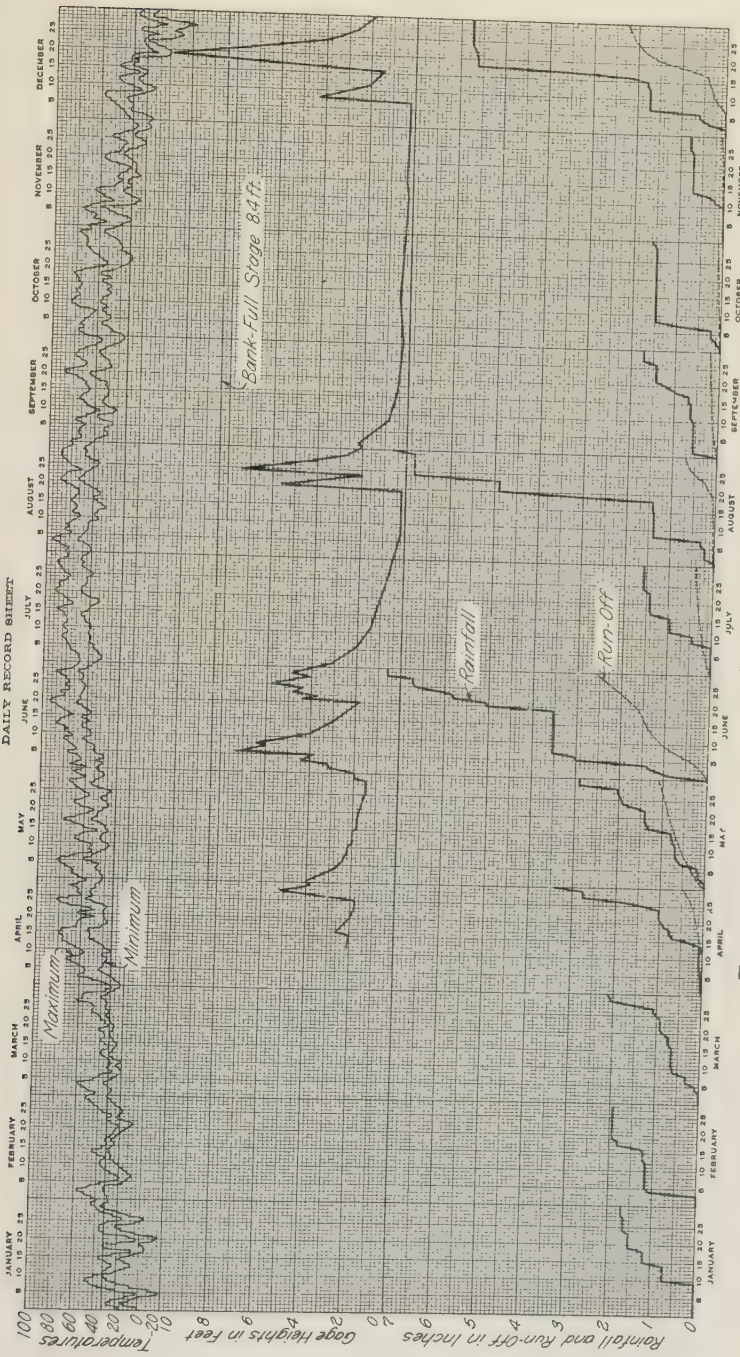


FIG. 23. HYDROLOGIC DATA FOR WATERSHED NO. 6 FOR 1924

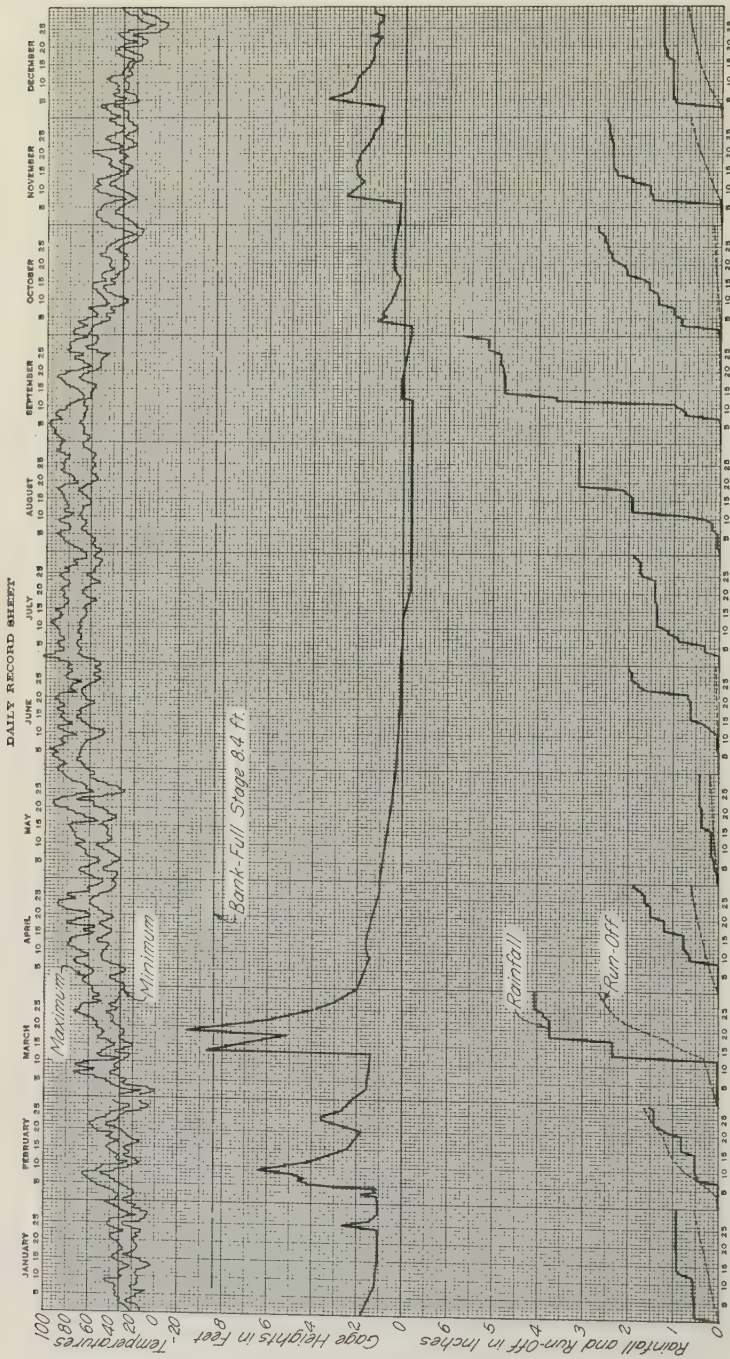


FIG. 24. HYDROLOGIC DATA FOR WATERSHED NO. 6 FOR 1925

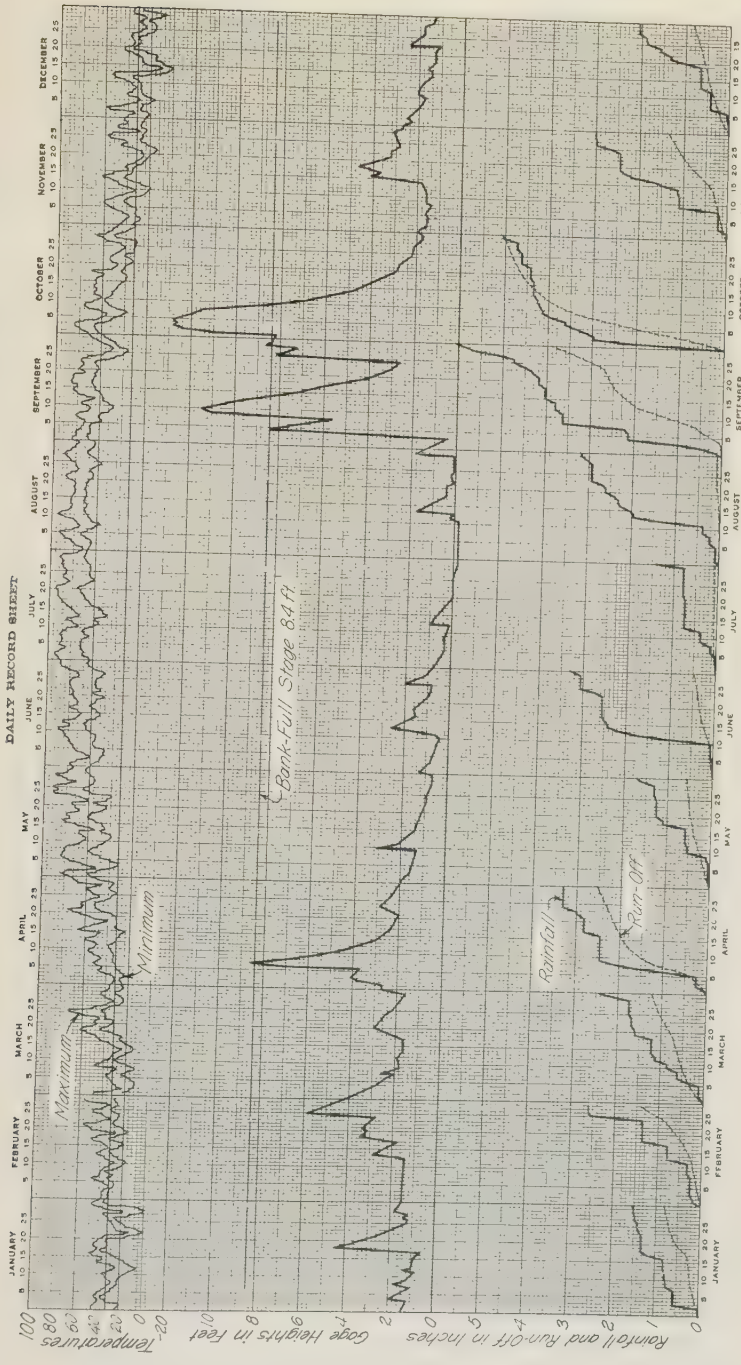


FIG. 25. HYDROLOGIC DATA FOR WATERSHED NO. 6 FOR 1926

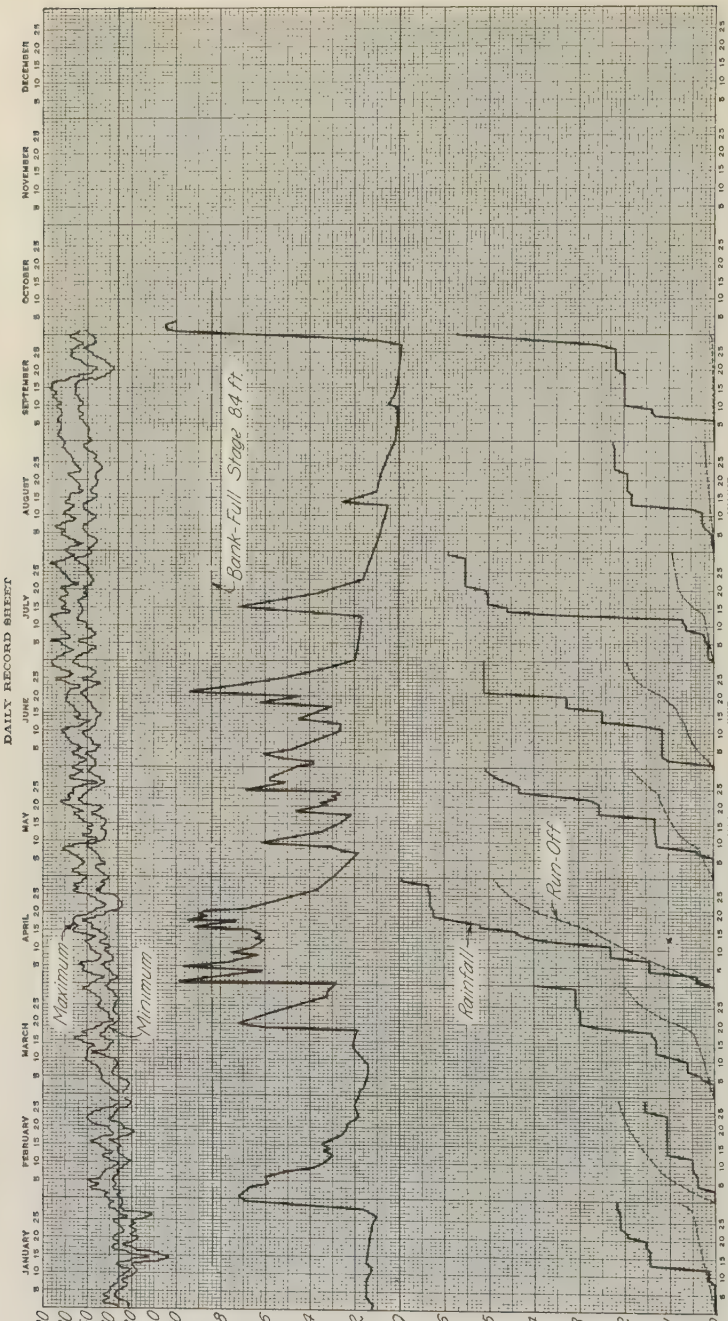


FIG. 26. HYDROLOGIC DATA FOR WATERSHED NO. 6 FOR 1927

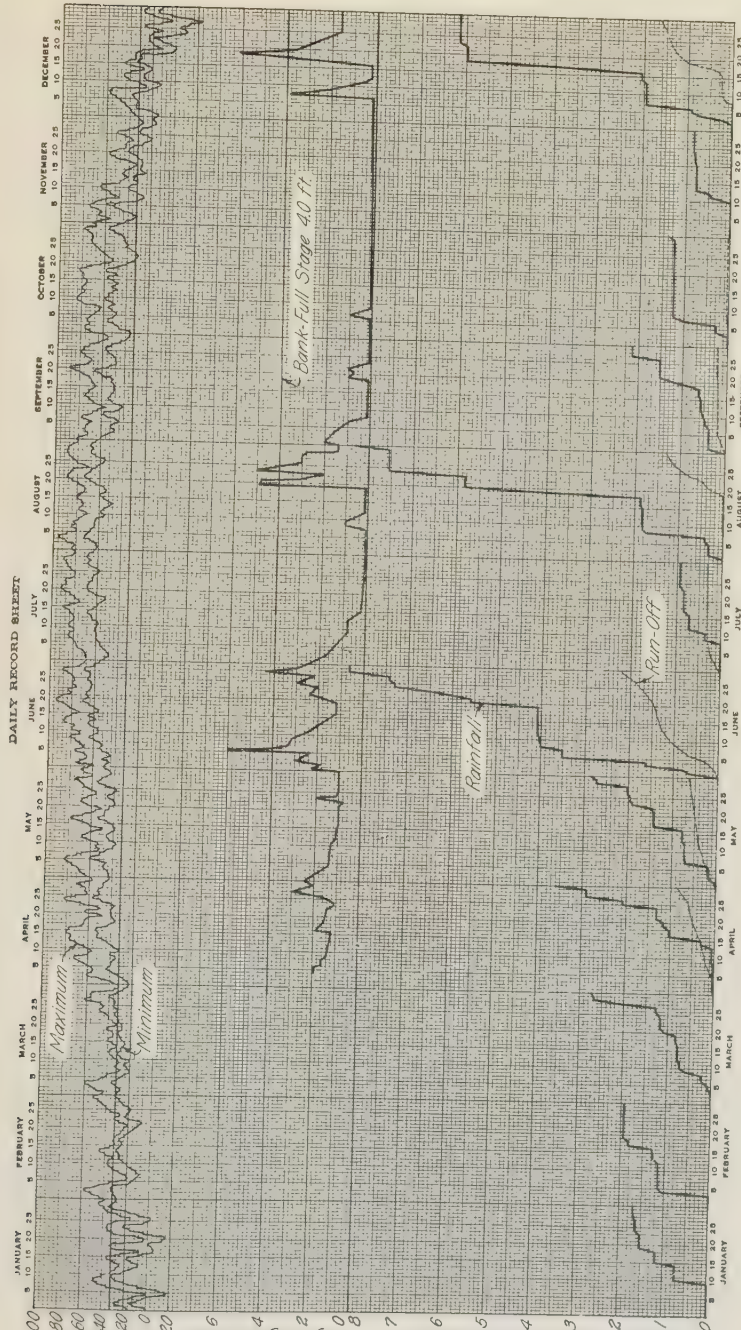


FIG. 27. HYDROLOGIC DATA FOR WATERSHED NO. 7 FOR 1924

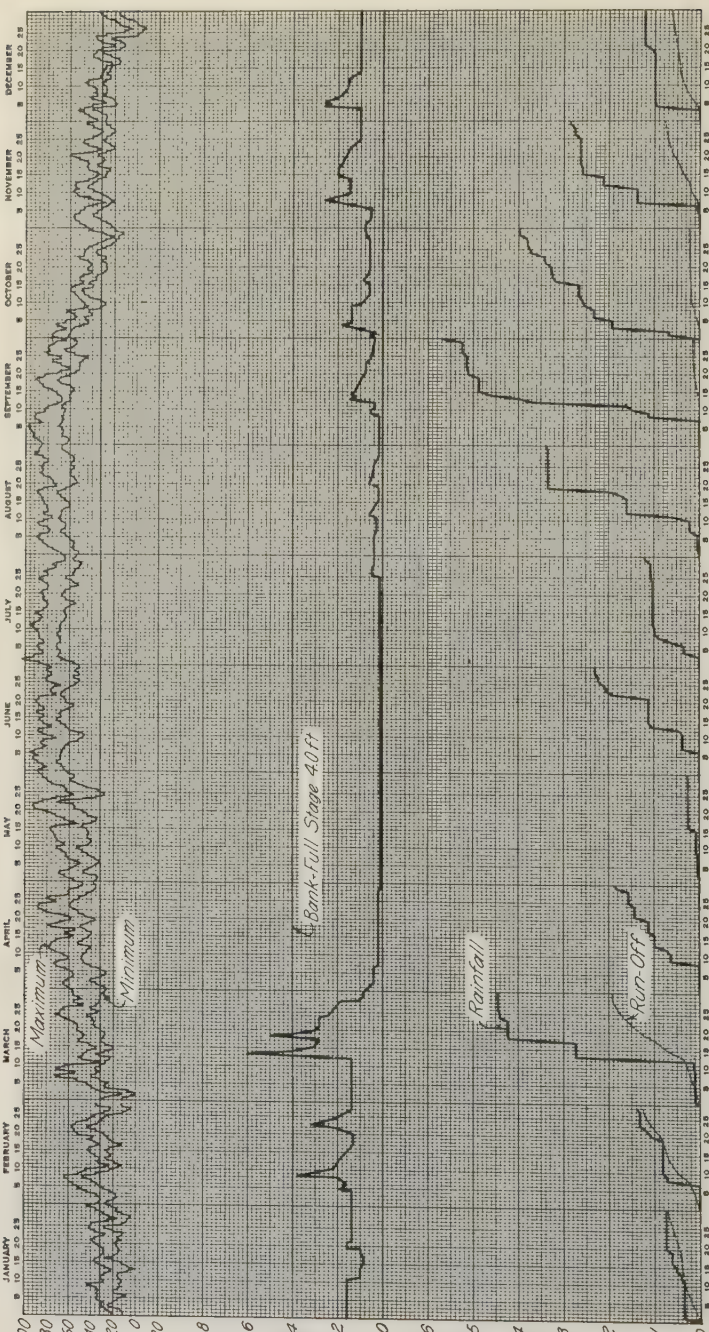


FIG. 28. HYDROLOGIC DATA FOR WATERSHED NO. 7 FOR 1925

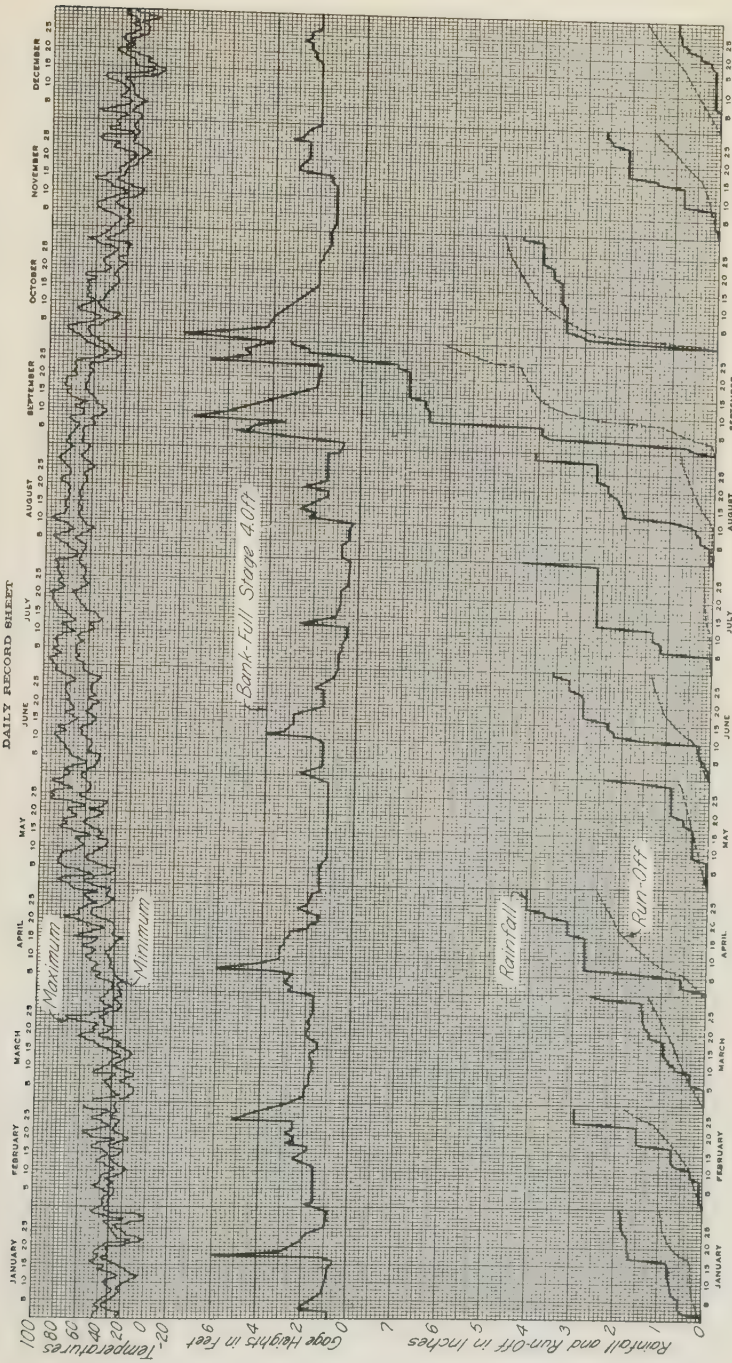


FIG. 29. HYDROLOGIC DATA FOR WATERSHED NO. 7 FOR 1926

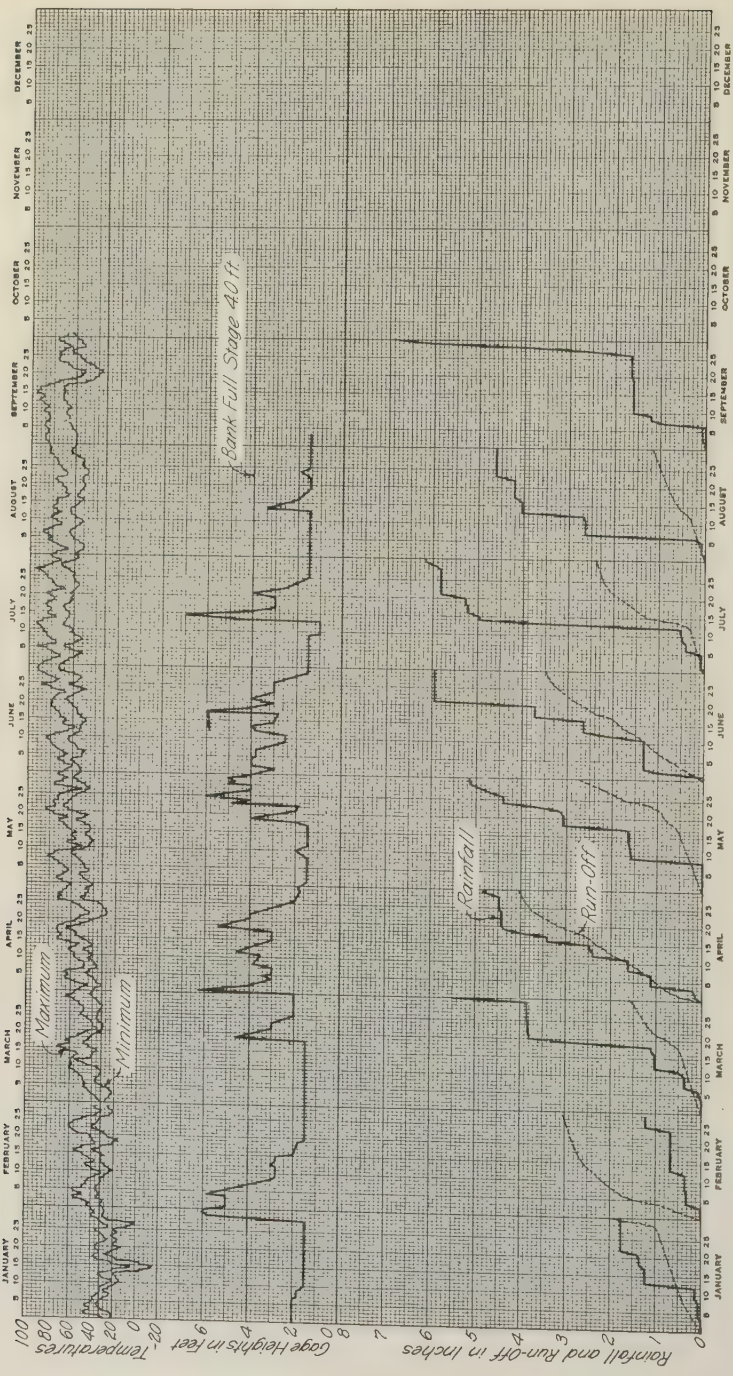


FIG. 30. HYDROLOGIC DATA FOR WATERSHED NO. 7 FOR 1927

23. *Variations in Rainfall.*—At the beginning of the investigation the question arose as to the error which would result if the rainfall records of the Urbana station were used for the entire area under consideration. This question is answered by the daily and monthly values in Table 5. For the benefit of those who do not care to make a detailed study of these data, Table 6 has been prepared, showing for each month the rainfall at the Urbana station, the average of the rainfalls over the seven watersheds, and the range of rainfall values. The small figures, written as exponents in the range columns, indicate the reference number of the watershed over which that amount of rainfall occurred.

In the ten-month period of record in 1924, the total precipitation at Urbana was 37.55 in., but over watershed No. 5 it was only 32.67 in., or a difference of — 13.0 per cent; and over watershed No. 3, the rainfall was 40.96 in., a difference of + 9.8 per cent. The greatest monthly range of rainfall was in August when 6.53 in. fell over watershed No. 5, whereas 10.94 in. fell over watershed No. 4.

In 1925 the lowest annual precipitation was 23.68 in. over watershed No. 5, which differed from the Urbana precipitation of 29.40 in. by — 19.5 per cent; and the highest was 31.13 in. over watershed No. 3, which differed from the Urbana value by + 5.9 per cent. The greatest monthly range was in August when 2.69 in. fell over watershed No. 5 and 4.83 in. over watershed No. 3. These values differ from that at Urbana by — 21.3 and + 41.2 per cent, respectively.

In 1926 watershed No. 6 received the lowest rainfall, 36.79 in., and watershed No. 1 received the highest, 44.43 in. The former was 15.5 per cent below and the latter was 2.4 per cent above the Urbana rainfall. The greatest monthly range was in September when 6.07 in. was precipitated over watershed No. 6, whereas 11.69 in. fell over watershed No. 4. As the Urbana rainfall for the month was 9.76 in., the former value was 37.8 per cent below and the latter was 19.8 per cent above the Urbana precipitation.

During the nine-month period in 1927, the range was from 38.90 in. over watershed No. 3 to 42.17 in. for watershed No. 7. The Urbana rainfall was 42.03 in. The greatest monthly range was in April when watershed No. 1 received 4.59 in. and watershed No. 7 received 6.96 in., whereas 4.79 in. was recorded at the Urbana station. The upper range was, therefore, + 45.3 per cent.

Considering the entire 43-month period, the rainfall at Urbana was 152.52 in., the average of the seven watersheds was 148.30 in., the largest total rainfall was 155.46 in. over watershed No. 4, and the smallest total rainfall was 136.26 in. over watershed No. 5.

TABLE 6

COMPARISON OF MONTHLY RAINFALL AT URBANA WITH MONTHLY RAINFALLS OVER THE SEVEN WATERSHEDS

Month	1924			1925			1926			1927		
	Urbana Rainfall in.	Average of Seven Watersheds in.	Range in.	Urbana Rainfall in.	Average of Seven Watersheds in.	Range in.	Urbana Rainfall in.	Average of Seven Watersheds in.	Range in.	Urbana Rainfall in.	Average of Seven Watersheds in.	Range in.
Jan.	....	....	.....	0.73	0.75	0.60^{2}-0.92^{5}	1.87	1.69	1.22^{5}-1.87^{7}	1.67	1.80	1.53^{2}-2.17^{5}
Feb.	....	....	.....	1.35	1.33	1.09^{1}-1.53^{6}	2.98	2.89	2.30^{5}-3.27^{2}	1.22	1.39	1.18^{2}-1.84^{4}
Mar.	2.74	2.58	1.52^{6}-3.04^{4}	4.55	4.20	3.76^{1}-4.49^{2}	2.75	2.30	1.66^{5}-2.89^{1}	5.53	4.82	4.00^{6}-5.54^{7}
Apr.	3.61	3.74	2.96^{5}-4.35^{3}	1.86	1.78	1.36^{5}-$2.00^{2,3}$	4.01	3.90	3.31^{1}-4.52^{4}	4.79	5.54	4.59^{1}-6.96^{6}
May	2.79	3.06	2.84^{4}-3.32^{3}	0.22	0.29	0.22^{2}-0.41^{6}	2.34	2.15	1.73^{6}-2.44^{5}	5.01	5.44	4.91^{2}-6.76^{5}
June	8.58	8.21	6.78^{5}-9.14^{2}	2.28	2.72	1.97^{5}-3.56^{3}	3.60	3.57	3.18^{1}-3.82^{4}	5.87	5.36	4.99^{3}-5.95^{7}
July	0.86	1.18	0.95^{7}-1.82^{5}	1.14	1.43	0.78^{1}-1.92^{6}	4.38	2.74	0.23^{5}-4.59^{1}	6.02	6.24	4.80^{5}-7.12^{3}
Aug.	8.53	8.62	6.53^{5}-10.94^{4}	3.42	3.84	2.69^{5}-4.83^{3}	4.01	3.44	1.90^{4}-4.30^{5}	4.79	3.25	2.23^{6}-4.61^{7}
Sept.	2.12	1.79	1.47^{3}-2.14^{7}	5.69	5.84	4.80^{5}-6.80^{1}	9.76	9.96	6.07^{6}-11.69^{4}	7.13	6.27	5.57^{4}-7.01^{7}
Oct.	1.36	1.52	1.24^{1}-1.85^{6}	4.16	3.01	1.47^{5}-3.99^{7}	4.45	4.75	4.28^{2}-5.31^{4}	....	....	.....
Nov.	0.83	0.93	0.76^{6}-1.13^{3}	2.81	2.67	2.40^{5}-2.85^{7}	2.46	2.65	2.44^{5}-3.00^{6}	....	....	.....
Dec.	6.13	6.22	5.41^{5}-6.73^{4}	1.19	1.12	0.40^{5}-1.30^{6}	0.93	1.32	0.97^{7}-2.05^{6}	....	....	.....
Total	37.55	37.85	32.67^{5}-40.96^{3}	29.40	28.98	23.68^{5}-31.13^{3}	43.54	41.36	36.79^{6}-44.43^{1}	42.03	40.11	38.90^{3}-42.17^{7}

The exponents of the rainfalls in the range columns denote the number of the watershed over which that rainfall occurred.

During the same period, the total rainfall at the adjoining Weather Bureau stations was as follows: Tuscola, 160.69 in.; Decatur, 168.68 in.; Clinton, 170.65 in.; and Roberts, 142.17 in.

It will be noted in Table 6 that watershed No. 5 received the lowest monthly rainfall during 18 of the 43 monthly periods. This fact was observed early during the investigation and it was thought that possibly the observer was reading the gage incorrectly, but investigation proved that this was not the case. It is evident that for some undiscovered reason watershed No. 5 received considerably less rainfall during the period of the investigation than the other watersheds.

If the individual storms are studied, instead of the monthly and yearly totals, much greater differences will be found than those stated above. Thus it is clearly evident that any investigation of the relation between rainfall and run-off is of little value unless the rainfall is measured at stations on the watershed itself, and that for large watersheds the rainfall stations should be within two or three miles of each other. If the investigation described in this bulletin were repeated, about twice as many rainfall stations would be used.

IX. Run-Off Computations

24. *Rating Curves.*—Discharge measurements were made, as previously described, on all the streams draining the seven watersheds. The dates on which the measurements were made and the stages of the streams at the time of measurement are shown in Table 3. These discharges were plotted as abscissas against stage of stream as ordinates, and rating curves were drawn. As was to be expected, discharges at the same stage differed considerably in the summer and fall and in the winter and spring, due to the growth of weeds in the channel and to the foliage on the trees. It was necessary, therefore, to draw at least two rating curves for each stream. One of the channels was cleared of growth during the period of investigation and three curves were used for the discharge of this channel. In other cases a gradual deterioration of channel, due to growth of vegetation, made three curves necessary. In constructing a rating curve from the points selected for that curve, the theory of least squares was used.

25. *Rating Table.*—For greater convenience a rating table was prepared from each curve. In these tables the discharges in cubic feet per second and in inches of run-off in 24 hours were tabulated for differences of 0.1 foot in the gage height.

26. *Stage of Stream.*—As previously stated, recording gages gave continuous records of gage heights on five of the streams. These records were transferred to the large working sheets on which the rainfall had been previously plotted. On the remaining two streams, readings were taken normally twice a day and more often during high stages. These values were likewise recorded on the work sheets. These hydrographs are shown, much reduced in scale, in Figs. 7-30.

27. *Daily Discharges, or Run-Off.*—The daily discharges were then obtained from the work sheets as follows: Where the change in stage was uniform throughout the day—from midnight to midnight—and did not exceed one foot, the stage at noon was taken as the average for the day, and the discharge corresponding to it was taken from the rating table. When the hydrograph for the day was irregular, the day was divided into the required number of periods of irregular length, the discharge for each period determined, and the several discharges added to obtain the discharge for the day. Where the daily change in stage exceeded one foot, the day was divided into two or four periods, depending on the amount of change, and the discharge for each period determined.

The daily run-offs thus obtained are tabulated in Table 5, and are shown as monthly summation curves in Figs. 7-30.

Because of unsatisfactory gage records on watershed No. 2, and further because this watershed receives the storm water from a portion of the city of Champaign, the run-off from this watershed is not shown.

X. Computation for Kutter's n

28. *Computations.*—As previously described, the discharges were computed from the measured velocity of flow and the cross-sectional area of channel. The area of the channel below the water surface was computed from the plotted cross-section at the meter station. The discharge divided by the area gave the mean velocity of flow at the time of discharge measurement. The wetted perimeter was measured on the plotted cross-section, and the hydraulic radius was computed. From these data C in Chezy's formula was computed, since

$$C = \frac{V}{\sqrt{RS}}$$

The values of C thus obtained were substituted in Kutter's formula,

$$C = \frac{41.6 + \frac{1.811}{n} + \frac{0.00281}{S}}{1 + \left(41.6 + \frac{0.00281}{S}\right)\frac{n}{\sqrt{R}}}$$

and the formula solved for n. In this way a value of n was determined for a number of stages of each stream. All the data obtained in these computations are recorded in Table 7. Several views of each slope course are shown in Figs. 31-36 to supplement the descriptions of the slope-course channels given in Table 7.

XI. Analysis of Data for n

29. *Watershed No. 1.*—Two slope courses were used for this channel, because just above the gaging station the stream flows through a city park and the channel is cleared annually of all large growth, whereas below the gaging station the side slopes are covered with a thick growth of willow, maple, poplar, and box elder trees up to 8 in. in diameter. The condition of these channels in July, 1924, may be seen from Fig. 31 and their condition in July, 1927, from Fig. 32.

Eleven measurements of n were made for the cleared course during the winter and spring months. The values obtained range from 0.025 to 0.032 with an average of 0.029. The stage of the stream had no effect upon n, as was to be expected from the excellent condition of the side slopes.

Seven measurements were made of this channel during the summer and fall when the slopes were covered with low vegetation. The values ranged from 0.029 to 0.041 with an average of 0.036. Here again stage of stream did not affect the results. These measurements indicate a difference of at least 0.05 in the value of n for winter and for summer conditions, or a difference of about 15 per cent in channel capacity.

The seasons of the year did not seem to affect the values of n obtained for the uncleared slope course. The 17 measurements gave values of n ranging from 0.043 to 0.066 with an average value of 0.050. The second highest value was 0.057. Because of the shade, very little vegetation grew on the side slopes, and because of the size of the trees most of the foliage was above the water, except at the highest stages. The only measurement which appeared to be especially affected

TABLE 7
HYDRAULIC DATA†

Date of Observation	Average Maximum Depth ft.	Average Surface Width ft.	Discharge sec-ft.	Average Cross-Section sq. ft.	Mean Velocity ft. per sec.	Mean Hydraulic Radius ft.	Slope of Water Surface	Coefficient in Formula $V = C\sqrt{RS}$ C	Coefficient of Roughness n	Description of Channel
Watershed No. 1, Cleared Course, Winter and Spring Condition										
May, 1, 1924	2.7	29.2	148.4	57.5	2.58	1.84	0.000844	65.4	0.025	Course, straight; 480 feet long. Cross-section, very little variation in shape. Side slopes, fairly regular. Bottom, quite flat but somewhat irregular in places. Soil, bottom covered with stones and gravel; upper part, boulder clay with oxidized iron. Condition, some small sprouts, bushes, and dead grass on side slopes, without foliage; bottom covered with mossy stones at lower end of course, but mostly with gravel at upper end. Constructed about 1908. (See Fig. 31.)
Apr. 26, 1924	2.9	30.6	151.2	65.4	2.31	2.01	0.000898	54.5	0.030	
Mar. 20, 1925	3.9	35.5	286.1	91.5	3.13	2.42	0.000933	65.8	0.026	
Feb. 9, 1925	4.1	39.4	301.1	105.7	2.85	2.53	0.001085	54.3	0.031	
Mar. 19, 1925	4.9	45.5	481.5	141.4	3.41	2.93	0.000806	70.0	0.025	
Mar. 14, 1925	5.3	47.7	483.1	161.7	2.99	3.20	0.000744	61.3	0.029	
Apr. 8, 1926	5.8	49.8	666.7	185.3	3.60	3.52	0.000958	62.0	0.030	
Feb. 25, 1926	5.9	49.8	625.0	186.2	3.36	3.53	0.000854	61.2	0.030	
Dec. 19, 1924	6.1	51.0	699.7	201.3	3.48	3.72	0.000704	67.9	0.027	
.....do.....	6.8	53.4	806.4	237.1	3.40	4.14	0.000704	63.0	0.030	
Apr. 7, 1926	9.5	63.6	1402.0	392.5	3.57	5.71	0.000552	63.6	0.032	
Watershed No. 1, Cleared Course, Summer and Fall Condition										
Sept. 14, 1925	3.2	32.0	153.1	72.7	2.11	2.11	0.001352	39.4	0.041	Condition, as above, but with heavy mat of short grass on side slopes and with foliage on the bushes.
Sept. 28, 1926	3.6	34.6	226.3	86.2	2.63	2.34	0.001367	46.5	0.036	
Aug. 20, 1924	4.1	38.5	307.3	102.5	3.00	2.51	0.001067	57.9	0.029	
Sept. 13, 1925	4.6	43.7	370.6	127.9	2.90	2.76	0.001340	47.7	0.036	
Oct. 1, 1926	5.2	46.9	468.3	154.4	3.03	3.11	0.001135	51.1	0.035	
Sept. 4, 1926	6.4	52.2	696.1	216.7	3.21	3.92	0.001077	49.5	0.038	
Oct. 2, 1926	7.6	55.8	993.0	278.1	3.57	4.64	0.000935	54.2	0.036	
.....	10.0*	....	.....	.....	....	....	.....	....	.....	

*Average maximum depth at bankful stage
†These data first appeared in Bul. No. 129, U. S. Dept. of Agriculture.

TABLE 7—*Continued*

HYDRAULIC DATA

Date of Observation	Average Maximum Depth ft.	Average Surface Width ft.	Discharge sec-ft.	Average Cross-Section sq. ft.	Mean Velocity ft. per sec.	Mean Hydraulic Radius ft.	Slope of Water Surface	Coefficient in Formula $V = C\sqrt{RS}$ C	Coefficient of Roughness n	Description of Channel
Watershed No. 1, Uncleared Course										
May 1, 1924	3.4	29.4	148.4	80.4	1.85	2.50	0.001118	34.9	0.048	Course, straight; 550 feet long. Cross-section, some variation in shape. Side slopes, irregular. Bottom, rather irregular. Soil, lower part, probably clay originally, but now mixed with a large percentage of sand; upper part, boulder clay, quite stony. Condition, side slopes covered with rather thick growth of small trees and sprouts of maple, elm, poplar, box elder, and some willow, from ½ inch to 8 inches in diameter; no grass; stones on bottom up to 12 inches in diameter; no appreciable silting. Constructed about 1908. (Figs. 31 and 32.)
Apr. 26, 1924	3.6	31.0	151.2	89.6	1.69	2.65	0.001216	29.7	0.057	
Sept. 14, 1925	3.9	32.3	153.1	97.9	1.56	2.77	0.000838	32.5	0.053	
Sept. 28, 1926	4.2	34.4	226.3	109.1	2.07	2.92	0.000924	39.9	0.044	
Jan. 18, 1926	4.4	35.6	202.8	114.5	1.77	2.95	0.001087	31.3	0.056	
Mar. 20, 1925	4.5	36.7	286.1	119.3	2.40	3.01	0.001111	41.5	0.043	
Feb. 9, 1925	4.8	38.6	301.1	129.4	2.33	3.09	0.001240	37.6	0.047	
Mar. 29, 1924	5.1	41.1	392.6	142.5	2.76	3.20	0.001587	38.6	0.047	
Sept. 13, 1925	5.3	42.4	370.6	149.8	2.47	3.25	0.001220	39.3	0.046	
Mar. 19, 1925	5.7	44.5	481.5	165.9	2.90	3.43	0.001427	41.5	0.044	
Oct. 1, 1926	5.9	45.7	462.3	176.1	2.66	3.56	0.001284	39.3	0.047	
Mar. 14, 1925	6.1	46.4	483.1	185.8	2.60	3.69	0.001435	35.7	0.052	
Feb. 25, 1926	6.5	48.1	625.0	208.0	3.00	3.91	0.001825	35.6	0.053	
Apr. 8, 1926	6.6	48.2	666.7	208.5	3.20	3.92	0.001531	41.3	0.046	
Dec. 19, 1924	6.9	49.8	699.7	225.7	3.10	4.10	0.001733	36.8	0.052	
Sept. 4, 1926	7.0	50.0	696.1	227.8	3.06	4.12	0.001282	42.1	0.046	
Oct. 2, 1926	8.3	54.5	993.0	297.5	3.34	4.91	0.001385	40.5	0.050	
Apr. 7, 1926	10.2	60.5	1402.0	405.2	3.46	5.99	0.001885	32.6	0.066	
.....	10.0*	....	.....	.....	....	....	.....	....	.....	
Watershed No. 2, Winter and Spring Condition										
Mar. 13, 1925	2.3	16.0	43.4	22.8	1.90	1.32	0.000625	66.3	0.023	Course, straight; 800 feet long. Cross-section, very little variation in shape. Side slopes, irregular. Bottom, slightly irregular. Soil, upper part, black silty clay loam; lower part, waxy yellow to gray clay. Condition, dry weeds in channel; no willows or other trees. Constructed 1908. (Fig. 32.)
Feb. 25, 1925	3.1	19.0	75.0	35.8	2.09	1.73	0.000921	52.5	0.030	
Oct. 2, 1926	3.7	21.0	126.4	48.8	2.59	2.12	0.001308	49.1	0.033	
Watershed No. 2, Summer and Fall Condition										
Sept. 9, 1926	3.4	20.1	94.5	42.0	2.25	1.93	0.001200	46.8	0.034	Condition: weeds and grass in channel; no trees or large brush.
Sept. 4, 1926	3.9	21.5	122.6	53.3	2.30	2.26	0.001339	41.8	0.039	
Aug. 20, 1924	4.2	22.1	149.8	59.3	2.53	2.42	0.001385	43.6	0.038	
.....	7.5*	....	....	.....	....	....	.....	....	.....	

*Average maximum depth at bankful stage.

TABLE 7—*Continued*
HYDRAULIC DATA

Date of Observation	Average Maximum Depth ft.	Average Surface Width ft.	Discharge sec-ft.	Average Cross-Section sq. ft.	Mean Velocity ft. per sec.	Mean Hydraulic Radius ft.	Slope of Water Surface	Coefficient in Formula $V = C\sqrt{RS}$ C	Coefficient of Roughness n	Description of Channel
Watershed No. 3, Lower Course, Winter and Spring Condition										
Feb. 7, 1925	2.4	18.1	21.9	29.8	0.73	1.50	0.000527	26.2	0.054	Course: nearly straight; 330 feet long. Cross-section: some variation in shape. Side slopes, irregular. Bottom, irregular. Soil, lower part, black clay; upper part, dark gray silty loam. Condition, badly obstructed by trees 2 to 12 inches in diameter covering side slopes, except intervals aggregating half length of right bank occupied by large weeds and bushy willows; no foliage. Constructed 1902; cleared about 1910. (Fig. 33.)
Mar. 16, 1925	3.3	19.8	45.5	46.1	0.99	2.09	0.000503	30.5	0.052	
Feb. 25, 1926	6.1	29.3	100.7	114.5	0.88	3.44	0.000397	23.8	0.077	
Watershed No. 3, Lower Course, Summer Condition 1924										
Aug. 8, 1924	4.4	24.0	67.1	71.0	0.95	2.60	0.000591	24.1	0.070	Condition, as described above, but with summer foliage, and three-fourths of length of bottom covered with short weeds.
June 6, 1924	4.8	25.1	72.2	79.9	0.90	2.82	0.000500	24.1	0.072	
.....do.....	5.4	26.9	85.6	96.5	0.89	3.15	0.000424	24.3	0.074	
Aug. 21, 1924	6.4	30.5	120.4	124.8	0.96	3.60	0.000473	23.4	0.080	
Aug. 20, 1924	8.8	40.8	206.1	207.4	0.99	4.49	0.000503	20.9	0.097	
Watershed No. 3, Lower Course, Fall Condition, 1926										
Sept. 28, 1926	4.3	23.8	48.0	68.8	0.70	2.58	0.000645	17.1	0.097	Condition, as in summer of 1924, but worse.
Sept. 9, 1926	7.5	34.3	111.5	157.8	0.71	4.05	0.000388	17.8	0.110	
Oct. 2, 1926	8.0	36.6	132.3	176.4	0.75	4.24	0.000409	18.0	0.111	
.....do.....	8.6	40.0	160.6	200.9	0.80	4.43	0.000421	18.5	0.109	
.....	9.0*	....	...	.....	....	....	.....	....	.....	

*Average maximum depth at bankful stage.

TABLE 7—*Continued*

HYDRAULIC DATA

Date of Observation	Average Maximum Depth ft.	Average Surface Width ft.	Discharge sec-ft.	Average Cross-Section sq. ft.	Mean Velocity ft. per sec.	Mean Hydraulic Radius ft.	Slope of Water Surface	Coefficient in Formula $V = C\sqrt{RS}$ C	Coefficient of Roughness n	Description of Channel
Watershed No. 3, Upper Course, Winter and Spring Condition										
Feb. 7, 1925	2.1	16.5	21.9	24.6	0.89	1.36	0.000473	35.1	0.040	Course, straight; 330 feet long. Cross-section, some variation in shape. Side slopes, rather irregular. Bottom, rather irregular. Soil, lower part, black clay; upper part, dark-gray silty clay loam. Condition, badly obstructed by trees 1 to 6 inches in diameter on side slopes and edges of bottom; some weeds, but practically no grass; no foliage. Constructed 1902; cleared, about 1910. (Fig. 33.)
Mar. 16, 1925	3.0	18.9	45.5	39.6	1.15	1.89	0.000424	40.5	0.039	
Mar. 29, 1924	5.3	27.6	106.7	92.8	1.15	3.00	0.000367	34.6	0.051	
Feb. 25, 1926	5.7	29.6	100.7	105.7	0.95	3.19	0.000394	26.9	0.067	
Watershed No. 3, Upper Course, Summer Condition, 1924										
Aug. 24, 1924	4.1	23.0	67.1	64.0	1.05	2.50	0.000494	29.8	0.056	Condition, as described above, but with summer foliage, and water weeds on bottom along one-tenth of course.
June 6, 1924	4.4	24.1	72.2	71.9	1.00	2.66	0.000409	30.4	0.056	
.....do.....	5.0	26.8	85.6	88.1	0.97	2.95	0.000373	29.3	0.060	
Aug. 21, 1924	6.1	30.9	120.4	116.6	1.03	3.36	0.000427	27.3	0.067	
Aug. 20, 1924	8.4	41.0	206.1	200.3	1.03	4.35	0.000536	21.3	0.094	
Watershed No. 3, Upper Course, Fall Condition, 1926										
Sept. 28, 1926	4.0	22.8	48.0	62.0	0.77	2.44	0.000491	22.4	0.073	Condition, as in summer of 1924, with more vegetation.
Sept. 9, 1926	7.1	34.2	111.5	149.0	0.75	3.86	0.000403	19.0	0.101	
Oct. 2, 1926	7.6	36.0	132.3	168.1	0.79	4.12	0.000500	17.3	0.114	
.....do.....	8.2	39.3	160.6	192.4	0.83	4.35	0.000497	17.9	0.112	
.....	9.0*	....	.....	.....	....	....	.....	....	.....	

*Average maximum depth at bankful stage.

TABLE 7—*Continued*
HYDRAULIC DATA

Date of Observation	Average Maximum Depth ft.	Average Surface Width ft.	Discharge sec-ft.	Average Cross-Section sq. ft.	Mean Velocity ft. per sec.	Mean Hydraulic Radius ft.	Slope of Water Surface	Coefficient in Formula $V = C\sqrt{RS}$ C	Coefficient of Roughness n	Description of Channel
Watershed No. 4, Winter Condition										
Mar. 20, 1926	2.3	21.1	22.0	31.9	0.69	1.44	0.000519	25.2	0.055	Course, straight; 661 feet long. Cross-section, very little variation in shape. Side slopes, fairly regular. Bottom, uneven and irregular. Soil, lower part, yellowish gray clay; upper part, light gray silty clay loam. Condition, in 1924, newly cleaned, leaving weeds and stubble on side slopes; in 1926, sides covered with trees and vines without foliage. Constructed 1906; cleaned, winter of 1923-24. (Fig. 34.)
Apr. 29, 1924	3.0	23.4	39.3	46.4	0.85	1.89	0.000474	28.3	0.054	
Apr. 26, 1924	3.1	23.8	42.3	49.5	0.85	1.96	0.000481	27.8	0.055	
May 1, 1924	3.3	24.6	50.3	53.8	0.93	2.07	0.000470	30.0	0.053	
Watershed No. 4, Summer Condition, 1924										
June 10, 1924	3.9	26.4	46.3	68.4	0.68	2.42	0.000455	20.4	0.080	Condition, side slopes covered with weeds and a few young bushes in full leaf; short water growth resembling smart weed on bottom; channel cleaned in preceding winter. (Fig. 34a.)
June 7, 1924	4.4	28.0	63.9	81.0	0.79	2.69	0.000466	22.3	0.076	
June 6, 1924	5.2	30.2	97.0	105.2	0.92	3.19	0.000523	22.6	0.079	
Watershed No. 4, Summer Condition, 1926										
Sept. 10, 1926	4.6	28.6	60.9	87.9	0.69	2.84	0.000516	18.1	0.095	Condition, side slopes covered with heavy growth of poplar trees 2 to 3 inches in diameter, large willows, and climbing vines; thick growth of water weeds on bottom.
Oct. 2, 1926	7.3	36.0	164.9	175.7	0.94	4.37	0.000546	19.2	0.104	
.....	8.5*	....	.....	.....	....	....	.....	....	.....	

*Average maximum depth at bankful stage.

TABLE 7—*Continued*

HYDRAULIC DATA

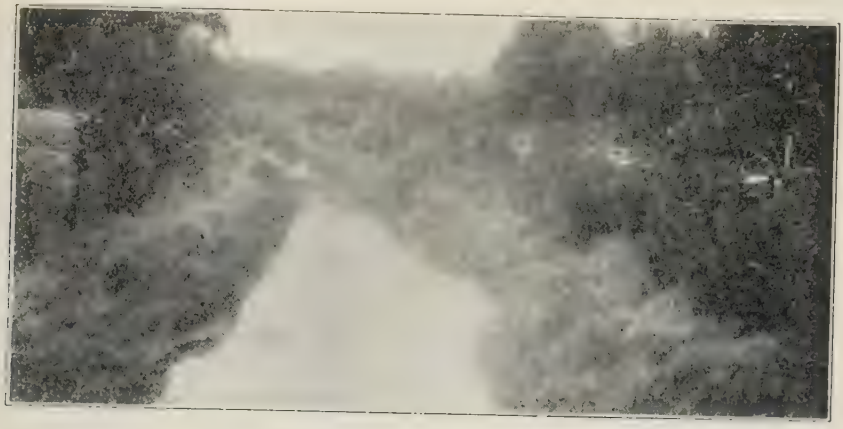
Date of Observation	Average Maximum Depth ft.	Average Surface Width ft.	Discharge sec-ft.	Average Cross-Section sq. ft.	Mean Velocity ft. per sec.	Mean Hydraulic Radius ft.	Slope of Water Surface	Coefficient in Formula $V = C\sqrt{RS}$ C	Coefficient of Roughness n	Description of Channel
Watershed No. 5, Spring Condition, 1925										
Mar. 26, 1925	1.8	15.0	17.8	18.0	0.99	1.16	0.000512	40.6	0.034	Course, straight; 1,000 feet long. Cross-section, practically no variation in shape. Side slopes, quite regular. Bottom, somewhat irregular. Soil, lower part, slippery gray clay; upper part, grayish tan silty clay loam. Condition, good; dead weeds practically flat on side slopes. Constructed 1886; redredged, 1922. (Figs. 34 and 35.)
Mar. 16, 1925	2.6	17.3	28.7	30.5	0.94	1.65	0.000384	37.4	0.040	
Mar. 14, 1925	3.8	20.0	77.7	53.4	1.46	2.39	0.000237	61.1	0.028	
Mar. 19, 1925	4.4	21.3	82.0	67.0	1.22	2.78	0.000175	55.5	0.031	
Watershed No. 5, Spring Condition, 1926										
Apr. 9, 1926	3.9	20.4	58.7	56.9	1.03	2.50	0.000476	29.9	0.056	Condition, bushy willows and dry weeds on side slopes; no foliage.
Apr. 8, 1926	4.7	21.8	76.6	72.7	1.05	2.92	0.000359	32.5	0.054	
Watershed No. 5, Summer and Fall Condition (before cat-tails were washed out)										
June 19, 1926	2.4	16.9	7.9	28.2	0.28	1.57	0.000572	9.4	0.143	Condition, weeds and willows in full leaf on side slopes; thick growth of cat-tails on bottom, which died and were washed out of channel about Nov. 15, 1925, and about Sept. 15, 1926.
Nov. 10, 1925	2.9	18.0	14.7	35.8	0.41	1.85	0.000756	11.0	0.131	
Sept. 7, 1926	5.0	22.4	45.1	78.5	0.57	3.05	0.000423	16.0	0.110	
Sept. 6, 1926	6.0	24.4	62.8	103.7	0.61	3.63	0.000381	16.3	0.115	
Sept. 5, 1926	7.2	26.4	84.6	132.1	0.64	4.18	0.000340	17.0	0.117	
Sept. 10, 1926	8.2	28.3	110.9	161.2	0.69	4.66	0.000234	20.8	0.099	
Watershed No. 5, Fall Condition (after cat-tails were washed out)										
Sept. 17, 1926	3.7	19.8	30.8	51.1	0.60	2.33	0.000412	19.4	0.083	Condition, weeds and bushy willows in full leaf on side slopes; cat-tails had died and been washed from channel.
Oct. 6, 1926	7.4	26.8	89.2	138.5	0.64	4.27	0.000132	27.1	0.073	
Oct. 2, 1926	10.6*	33.2	398.5	233.5	1.71	5.61	0.000413	35.4	0.060	

*Average maximum depth at bankful stage.

TABLE 7—*Concluded*
HYDRAULIC DATA

Date of Observation	Average Maximum Depth ft.	Average Surface Width ft.	Discharge sec-ft.	Average Cross-Section sq. ft.	Mean Velocity ft. per sec.	Mean Hydraulic Radius ft.	Slope of Water Surface	Coefficient in Formula $V = C\sqrt{RS}$ C	Coefficient of Roughness n	Description of Channel
Watershed No. 6, Winter and Spring Condition, Uncleared										
Mar. 26, 1925	4.2	39.1	133.7	107.8	1.24	2.62	0.000273	46.4	0.037	Course, straight; 816 feet long. Cross-section, very little variation in shape. Side slopes, fairly regular. Bottom, uneven and irregular. Soil, lower part, light gray clay; upper part, yellowish gray clay. Condition, side slopes covered with dense growth of bushy willows, except near bottom; some small poplar saplings at intervals along course; one silt bar about middle of course, otherwise bottom in quite good condition. Constructed in 1885; redredged in 1909. (Figs. 35 and 36.)
Apr. 29, 1924	4.8	42.4	151.0	133.3	1.13	2.96	0.000250	41.6	0.042	
Apr. 28, 1924	5.6	45.2	200.4	166.4	1.20	3.45	0.000241	41.8	0.044	
.....do.....	5.7	45.6	198.9	172.4	1.15	3.55	0.000240	39.5	0.047	
June 9, 1924	6.6	48.4	242.8	214.1	1.13	4.11	0.000260	34.7	0.056	
June 7, 1924	7.4	50.7	303.8	251.4	1.21	4.56	0.000248	35.9	0.056	
Mar. 16, 1925	7.4	50.9	256.4	254.3	1.01	4.60	0.000240	30.4	0.066	
Dec. 22, 1924	7.5	51.1	276.5	259.5	1.07	4.67	0.000224	33.0	0.061	
June 6, 1924	7.9	52.2	320.6	279.2	1.15	4.91	0.000281	30.9	0.067	
Mar. 14, 1925	9.3	55.4	396.1	354.1	1.12	5.78	0.000261	28.8	0.076	
Mar. 19, 1925	10.1	57.2	455.6	400.5	1.14	6.26	0.000266	27.9	0.080	
Oct. 8, 1926	11.6	60.7	560.1	489.2	1.14	7.14	0.000254	26.9	0.088	
Oct. 3, 1926	13.3	64.9	734.3	595.2	1.23	8.03	0.000255	27.3	0.090	
.....	13.0*	....	.....	.....	....	....	.....	....	.....	
Watershed No. 6, Summer and Fall Condition, Uncleared										
Sept. 17, 1926	6.8	48.8	185.1	221.4	0.84	4.20	0.000241	26.3	0.075	Condition, about the same as for above measurements, except that growth was covered with foliage. This channel was cleared during spring of 1925, but there appeared to be as much growth in channel by the fall of 1926 as previous to clearing.
Sept. 7, 1926	7.4	50.8	192.2	253.7	0.76	4.60	0.000244	22.6	0.090	
Aug. 25, 1924	8.0	52.3	259.7	282.3	0.92	4.94	0.000286	24.5	0.085	
Sept. 6, 1926	8.5	53.6	244.4	309.6	0.79	5.27	0.000239	22.3	0.096	
Sept. 5, 1926	9.2	55.2	282.5	347.7	0.81	5.71	0.000228	22.5	0.098	
Sept. 13, 1926	9.6	56.1	319.7	372.2	0.86	5.96	0.000214	24.0	0.093	
Sept. 10, 1926	12.0	61.6	495.2	511.0	0.97	7.33	0.000236	23.3	0.104	
Watershed No. 6, Winter and Spring Condition, Cleared										
Jan. 19, 1926	4.5	40.8	158.0	120.4	1.31	2.78	0.000186	57.7	0.030	Condition, practically no growth in channel; cleared during spring of 1925.
Feb. 26, 1926	6.1	46.8	296.1	189.7	1.56	3.79	0.000169	61.7	0.030	
Apr. 9, 1926	6.8	48.8	332.0	220.7	1.50	4.19	0.000146	60.8	0.032	
Apr. 8, 1926	7.9	52.2	461.1	279.6	1.65	4.91	0.000142	62.4	0.032	
.....	13.0*	....	.....	.....	....	....	.....	....	.....	

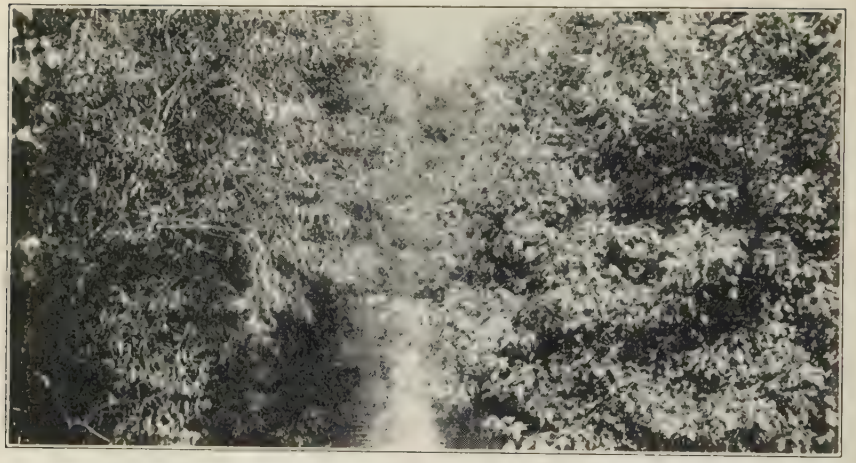
a. Watershed No. 1, Upper Slope Course, May, 1924



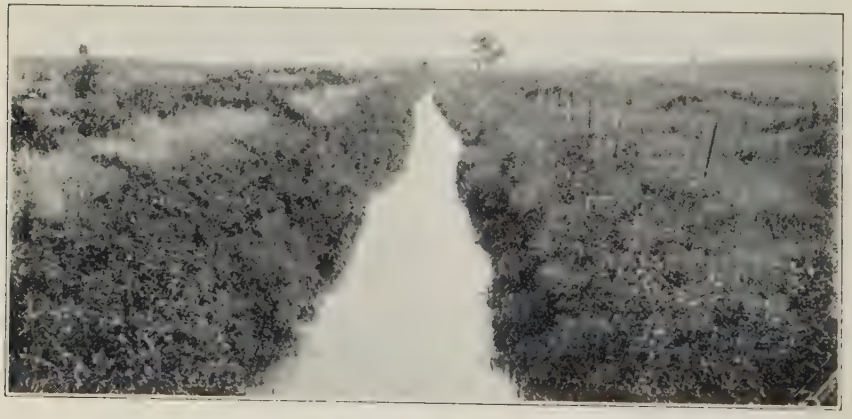
b. Watershed No. 1, Upper Slope Course, July, 1927

c. Watershed No. 1, Lower Slope Course, July, 1924

FIG. 31. VIEWS OF SLOPE COURSES, SHOWING CONDITION OF CHANNEL



a. Watershed No. 1, Lower Slope Course, July, 1927



b. Watershed No. 2, 1924

c. Watershed No. 2, 1925

FIG. 32. VIEWS OF SLOPE COURSE, SHOWING CONDITION OF CHANNEL

by the foliage was that of April 7, 1926, when at a bankful stage a value of 0.066 was obtained. The removal of the trees on the side slopes would increase the capacity of this section about 60 per cent.

30. *Watershed No. 2.*—This channel was constructed in 1908 and has been kept in good condition. There were no trees or large bushes on the side slopes, as may be seen from the views in Fig. 32, and low values of n were found. The average of the three values obtained for winter and spring conditions was 0.029, and for summer and fall conditions the average value was 0.037. This increase in the value of n during the summer and fall is typical, and will occur in the most carefully maintained channels.

31. *Watershed No. 3.*—Two slope courses of equal length were used for this stream. The side slopes on both courses were covered with trees, as can be seen from the views in Fig. 33. The trees on the lower course were larger but less numerous than on the upper course; also, the lower course had a growth of water weeds throughout about 75 per cent of its length.

For both courses, values of n increased with the stage, because of the increased interference of the branches of the trees at the higher stages. On the lower course, during the winter and spring, the average value of the three determinations was 0.061, whereas for the upper course at the same time the average was 0.049. The difference in these values indicates the effect of the larger size of trees on the lower course and of the vegetation in the channel.

During the summer of 1924, the lower channel gave an average value of n of 0.079, whereas 0.067 was obtained for the upper course. The higher values of n during 1926 are the results of the growth of the trees in the two-year period since 1924. The removal of the trees in this channel would increase its capacity about 200 per cent.

32. *Watershed No. 4.*—During the winter of 1923-24, the larger growth was removed from the channel of this stream, leaving the weeds and smaller bushes. Figure 34a shows the condition of the channel in June, 1924, shortly after the first three measurements were made. The three values of n range from 0.053 to 0.055. Had the channel been cleared of the smaller growth, as well as the larger, probably a value of n of 0.040 or less would have resulted. The removal of the smaller growth would have increased the capacity of the channel about 35 per cent. Figure 34b shows the condition of the channel in April, 1925.

The spring measurements were made from April 28 to May 1, 1924. Five weeks later the bushes were in full leaf and the bottom was covered with low weeds, resembling smartweeds. The effect of this growth was to increase the value of n from 0.054 to 0.078. The condition of this channel rapidly became worse, and by the summer of 1926 the side slopes were covered with a heavy growth of small poplar trees, willows, and climbing vines; and the bottom was covered with a thick growth of weeds. A measurement for n on September 10, 1926, at a stage of 4.6 ft. gave a value of n of 0.095, whereas at the same stage on June 7, 1924, a value of 0.076 was obtained.

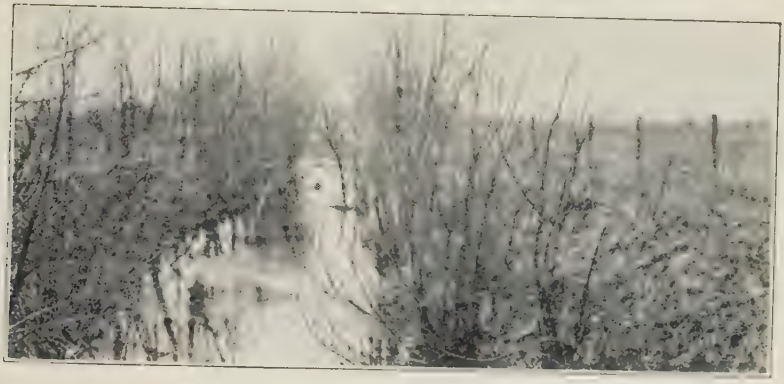
33. *Watershed No. 5.*—Three views of the slope course of this channel are shown in Figs. 34 and 35, taken July, 1924, April, 1925, and July, 1927, respectively. The first measurements on this course were made in March, 1925. The channel was in good condition and the average value of the four determinations of n was 0.033. In April, 1926, there were bushy willows and dry weeds on the side slopes, and n was found to be 0.055. This increase shows the result of one year's growth of vegetation.

During the summers of 1925 and 1926 there was a thick growth of cattails in the bottom of the channel. Six measurements of n were made during the two summers. At a stage of 2.4 ft., n was found to be 0.143, the highest value obtained on any of the streams during the investigation. At medium summer stages, n was about 0.115, and at nearly bankful stage it was 0.099. The cattails in the channel were washed out by the high water in September, 1926, and three observations made after this occurrence gave an average value of 0.072.

34. *Watershed No. 6.*—Figure 35c shows the condition of this slope course in July, 1924, when the vegetation was in full foliage. The view in Fig. 36a was taken on April 3, 1925, just before the channel was cleared. Its condition on May 11, 1925, after clearing, is shown in Fig. 36b, and its condition in July, 1927, is shown in Fig. 36c.

Four measurements made during January, February, and April, 1926, when there was practically no growth in the channel, gave values of n between 0.032 and 0.030. By the fall of 1926, the side slopes were covered with a dense growth of bushy willows, and the channel was in as poor a condition as before it was cleared. The 13 observations for n made when the channel was in an uncleared condition gave values of n ranging from 0.037 at the lowest stage to 0.090 at a bankful stage. This is the only instance where there was a definite increase in n with an increase in stage.

a. Watershed No. 3, Upper Slope Course, July, 1924

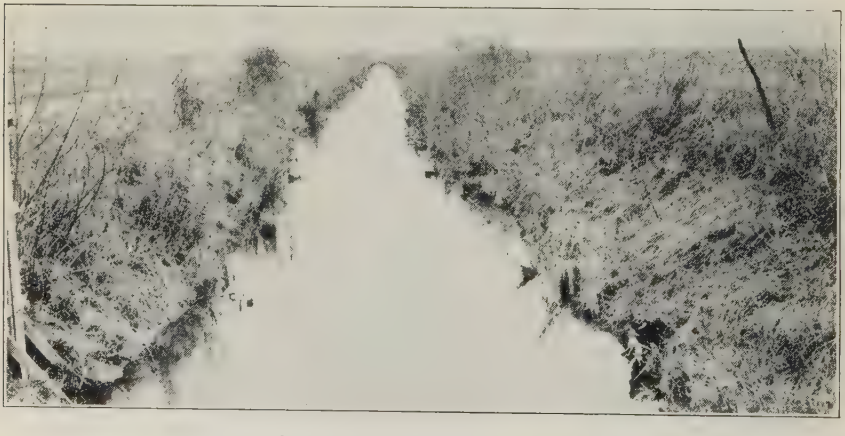


b. Watershed No. 3, Upper Slope Course, April, 1925

c. Watershed No. 3, Lower Slope Course, April, 1925

FIG. 33. VIEWS OF SLOPE COURSES, SHOWING CONDITION OF CHANNEL

a. Watershed No. 4, July, 1924

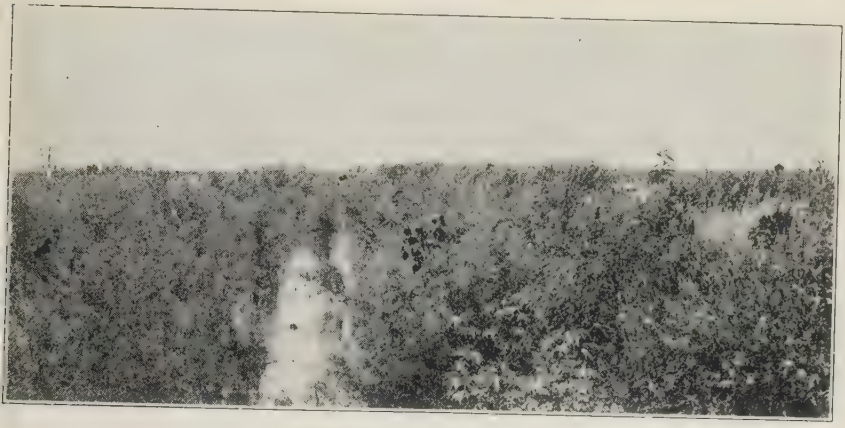


b. Watershed No. 4, April, 1925

c. Watershed No. 5, July, 1924

FIG. 34. VIEWS OF SLOPE COURSES, SHOWING CONDITION OF CHANNEL

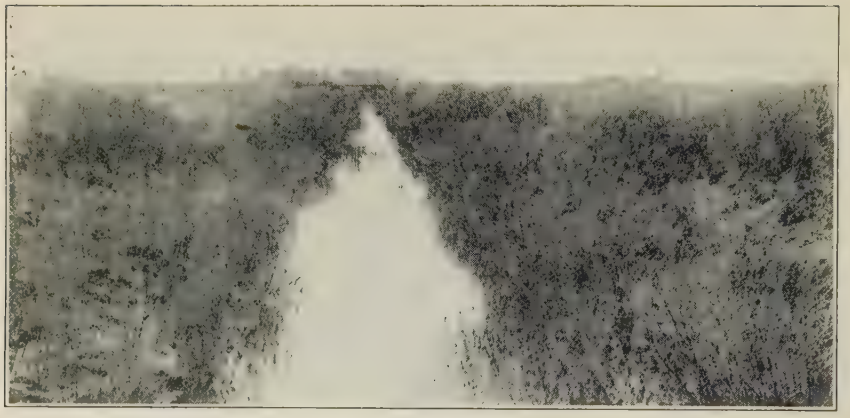
a. Watershed No. 5, April, 1925



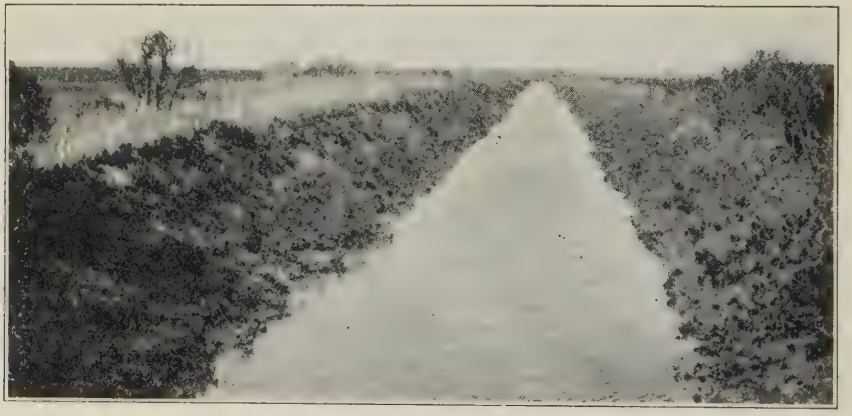
b. Watershed No. 5, July, 1927

c. Watershed No. 6, Downstream, July, 1924

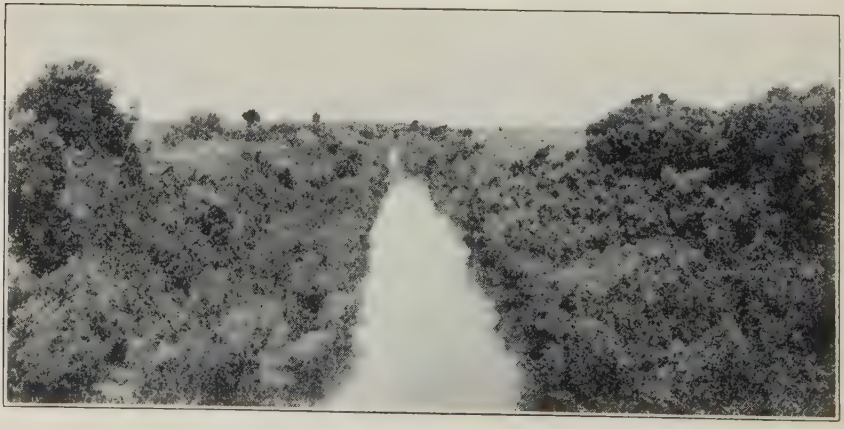
FIG. 35. VIEWS OF SLOPE COURSES, SHOWING CONDITION OF CHANNEL



a. Watershed No. 6, Downstream, April, 1925



b. Watershed No. 6, Upstream, May, 1925



c. Watershed No. 6, Upstream, July, 1927

FIG. 36. VIEWS OF SLOPE COURSES, SHOWING CONDITION OF CHANNEL

35. *Conclusions.*—The following conclusions can be drawn from the results obtained in the measurement for the roughness factor n.

(1) The minimum value of n which should be used in the design of drainage ditches in Central Illinois is 0.040. This value obtains at high stages during the summer months in the most carefully maintained channels, where the bottom of the channel is clear of vegetation and the side slopes are covered with grass or low weeds, but no bushes. This low value of n should not be used unless the channel is to be cleared annually of all weeds and bushes.

(2) A value of n of 0.050 should be used, if the channel is to be cleared in alternate years only. Large weeds and bushy willows, three to four feet high, on the side slopes will produce this value of n.

(3) In channels which are not cleared for a number of years, the growth may become so abundant that values of n above 0.100 may be found to exist.

(4) Trees 6 to 8 inches in diameter growing on the side slopes do not impede the flow so much as do small bushy growths, provided the lower overhanging limbs are cut off.

XII. Flood Discharge

36. *Flood Data.*—The data for the ten flood periods, when one or more of the streams rose above flood stage, are presented in Tables 8 and 9. In the latter, the data are grouped by storm periods and under each period the watersheds are arranged in the order of size, so that the effect of size of watershed upon the rate of discharge might be more readily studied. The rainfalls occurring during the two weeks preceding the flood crest are given, and also the approximate length of the storm which produced the flood peak. In Table 8 much the same data are given, but they are grouped by watersheds in order that the relation between the flood discharge and the rainfall which produced it might be studied to better advantage. The data in Table 8 will be considered first.

37. *Watershed No. 1.*—The channel of this stream above the gaging station was in good condition throughout the period of the investigation, and consequently the relation between gage height and discharge is quite regular for all the flood periods. Only once was the capacity of this channel exceeded, which was on April 7-8, 1926, when a peak discharge of 24.5 sec-ft. per sq. mi. occurred at a stage of 8.90 ft. The stream was above the flood stage of 8.2 ft. for a period of 20 hours. The value of n for the channel just above the gaging

Table 8
Flood Data Grouped by Watersheds

Date of Flood	Max. Stage ft.	Duration of Period above Flood Stage hrs.	Max. Rate of Discharge sec-ft. per sq. mi.	Rainfall Causing Flood Peak			Preceding Rainfalls of 0.25 in. or More, Occurring within Two Weeks of Flood Crest
				Date	Amount in.	Duration hrs.	
Watershed No. 6—Area, 63.2 sq. mi., Flood Stage, 8.4 ft.							
Oct. 1-10, 1926	12.80	205	11.4	Oct. 1-2	2.95	33	Sept. 27-29, 1.33 in.; Sept. 24-25, 0.40 in.
Apr. 7-8, 1926	8.60	7	10.0	Apr. 6-7	1.45	33	Apr. 2, 0.25 in.; Mar. 30-31, 0.70 in.
Dec. 18-21, 1924	10.80	69	8.8	Dec. 16-19	3.85	57	Dec. 7-8, 1.14 in.; Dec. 3-5, 0.60 in.
Sept. 9-14, 1926	11.45	125	7.8	Sept. 8-9	1.40	15	Sept. 3-4, 1.60 in.; Sept. 1-3, 0.54 in.; Aug. 29, 0.14 in.
Apr. 1-2, 1927	9.90	24	7.7	Mar. 31-Apr. 1	0.92	5	Mar. 19-20, 1.59 in.; Mar. 11-12, 0.70 in.
Apr. 18-20, 1927	9.50	65	7.3	Apr. 18	0.55	6	Apr. 15-16, 0.85 in.; Apr. 12-13, 2.05 in.; Apr. 8, 0.86 in.; Apr. 4, 1.06 in.
Mar. 19-20, 1925	9.55	36	7.3	Mar. 18	1.40	16	Mar. 13, 2.30 in.
Oct. 1-2, 1927	10.50	90	6.7	Oct. 1	1.08	8	Sept. 30, 1.02 in.; Sept. 29, 1.12 in.; Sept. 28, 1.00 in.; Sept. 27, 0.42 in.
July 14-15, 1927	7.20	0	3.5	July 13-14	3.85	34	July 9, 0.45 in.; July 6, 0.35 in.
Aug. 20-21, 1924	5.60	0	2.3	Aug. 19-20	3.50	24	Aug. 9, 1.10 in.
Watershed No. 1—Area, 60.5 sq. mi., Flood Stage, 8.2 ft.							
Apr. 7-8, 1926	8.90	20	24.5	Apr. 6-7	2.60	33	Apr. 2, 0.54 in.; Mar. 30-31, 0.96 in.
Oct. 1-10, 1926	6.85	0	16.1	Oct. 1-2	2.30	19	Sept. 27-29, 1.35 in.; Sept. 24-25, 1.33 in.
Dec. 18-21, 1924	6.35	0	14.3	Dec. 16-19	4.40	46	Dec. 7-8, 0.67 in.; Dec. 3-5, 1.05 in.
Oct. 1-2, 1927	5.55	0	11.2	Oct. 1	1.65	8	Sept. 30, 0.60 in.; Sept. 29, 1.50 in.; Sept. 28, 1.25 in.; Sept. 27, 0.80 in.
July 14-15, 1927	5.45	0	10.9	July 13-14	2.30	6	July 9, 0.75 in.; July 6, 0.25 in.
Apr. 18-20, 1927	4.80	0	9.4	Apr. 18	0.43	2	Apr. 15-16, 0.90 in.; Apr. 12-13, 0.94 in.; Apr. 8, 0.60 in.; Apr. 4, 0.33 in.
Sept. 9-14, 1926	4.55	0	8.2	Sept. 8-9	1.77	17	Sept. 3-4, 3.65 in.; Sept. 1-3, 0.84 in.; Aug. 29, 0.28 in.
Aug. 20-21, 1924	4.50	0	8.1	Aug. 19-20	3.35	18	Aug. 9, 2.30 in.
Mar. 19-20, 1925	4.20	0	7.7	Mar. 18	1.20	12	Mar. 13, 2.25 in.
Apr. 1-2, 1927	3.45	0	5.8	Mar. 31-Apr. 1	1.45	5	Mar. 19-20, 2.38 in.; Mar. 11-12, 0.57 in.

TABLE 8—*Continued*
FLOOD DATA GROUPED BY WATERSHEDS

Date of Flood	Max. Stage ft.	Duration of Period above Flood Stage hrs.	Max. Rate of Discharge sec-ft. per sq. mi.	Rainfall Causing Flood Peak			Preceding Rainfalls of 0.25 in. or More, Occurring within Two Weeks of Flood Crest
				Date	Amount in.	Duration hrs.	
Watershed No. 7—Area, 27.2 sq. mi., Flood Stage, 4.0 ft.							
Oct. 1-10, 1926	8.05	156	42.9	Oct. 1-2	2.75	20	Sept. 27-29, 1.30 in.; Sept. 24-25, 1.05 in.
Sept. 9-14, 1926	7.50	121	35.1	Sept. 8-9	2.52	15	Sept. 3-4, 2.90 in.; Sept. 1-3, 0.82 in.; Aug. 29, 1.38 in.
July 14-15, 1927	7.00	60	28.0	July 13-14	4.45	32	July 9, 0.10 in.; July 6, 0.43 in.
Apr. 1-2, 1927	6.30	40	18.2	Mar. 31-Apr. 1	1.70	5	Mar. 19-20, 2.68 in.; Mar. 11-12, 0.67 in.
Dec. 18-21, 1924	6.10	48	15.7	Dec. 16-19	3.90	46	Dec. 7-8, 1.04 in.; Dec. 3-5, 0.90 in.
Apr. 7-8, 1926	6.00	44	14.5	Apr. 6-7	2.21	33	Apr. 2, 0.58 in.; Mar. 30-31, 0.79 in.
Apr. 18-20, 1927	5.40	108	8.9	Apr. 18	0.50	1	Apr. 15-16, 0.92 in.; Apr. 12-13, 0.82 in.; Apr. 8, 0.52 in.; Apr. 4, 0.93 in.
Mar. 19-20, 1925	5.00	22	6.1	Mar. 18	1.48	11	Mar. 13, 2.60 in.
Aug. 20-21, 1924	4.90	32	5.8	Aug. 19-20	4.00	18	Aug. 9, 1.55 in.
Watershed No. 4—Area, 15.3 sq. mi., Flood Stage, 7.4 ft.							
Apr. 7-8, 1926	8.60	12	21.7	Apr. 6-7	2.65	33	Apr. 2, 0.58 in.; Mar. 30-31, 0.87 in.
Aug. 20-21, 1924	8.35	14	16.9	Aug. 19-20	5.60	18	Aug. 9, 1.98 in.
Apr. 1-2, 1927	7.45	1	15.9	Mar. 31-Apr. 1	1.45	5	Mar. 19-20, 2.70 in.; Mar. 11-12, 0.55 in.
Dec. 18-21, 1924	7.40	0	15.2	Dec. 16-19	4.60	46	Dec. 7-8, 0.76 in.; Dec. 3-5, 1.18 in.
Oct. 1-2, 1927	7.80	14	14.6	Oct. 1	1.85	8	Sept. 30, 0.40 in.; Sept. 29, 1.95 in.; Sept. 28, 1.18 in.; Sept. 27, 0.22 in.
Apr. 18-20, 1927	6.95	0	12.4	Apr. 18	0.60	5	Apr. 15-16, 1.00 in.; Apr. 12-13, 1.13 in.; Apr. 8, 0.83 in.; Apr. 4, 0.27 in.
Oct. 1-10, 1926	8.50	64	11.4	Oct. 1-2	2.62	16	Sept. 27-29, 1.60 in.; Sept. 24-25, 1.24 in.
Mar. 19-20, 1925	5.10	0	5.3	Mar. 18	1.23	12	Mar. 13, 2.25 in.
Sept. 9-14, 1926	6.25	0	5.0	Sept. 8-9	2.70	13	Sept. 3-4, 3.68 in.; Sept. 1-3, 0.63 in.; Aug. 29, 0.38 in.
July 14-15, 1927	3.20	0	3.8	July 13-14	2.85	35	July 9, 0.20 in.; July 6, 0.48 in.

TABLE 8—*Concluded*

FLOOD DATA GROUPED BY WATERSHEDS

Date of Flood	Max. Stage ft.	Duration of Period above Flood Stage hrs.	Max. Rate of Discharge sec-ft. per sq. mi.	Rainfall Causing Flood Peak			Preceding Rainfalls of 0.25 in. or More, Occurring within Two Weeks of Flood Crest
				Date	Amount in.	Duration hrs.	
Watershed No. 3—Area, 12.0 sq. mi., Flood Stage, 7.5 ft.							
Aug. 20-21, 1924	8.50	17	18.2	Aug. 19-20	4.90	18	Aug. 9, 1.80 in.
Oct. 1-2, 1927	8.50	20	16.5	Oct. 1	1.60	8	Sept. 30, 0.63 in.; Sept. 29, 2.50 in.; Sept. 28, 1.30 in.; Sept. 27, 0.33 in.
Dec. 18-21, 1924	6.90	0	15.2	Dec. 16-19	4.05	46	Dec. 7-8, 1.02 in.; Dec. 3-5, 1.24 in.
July 14-15, 1927	7.75	6	14.2	July 13-14	4.05	7	July 9, 0.25 in.; July 6, 0.25 in.
Oct. 1-10, 1926	8.30	34	14.2	Oct. 1-2	2.90	50	Sept. 27-29, 1.32 in.; Sept. 24-25, 1.06 in.
Apr. 7-8, 1926	6.80	0	13.7	Apr. 6-7	1.90	33	Apr. 2, 0.52 in.; Mar. 30-31, 0.83 in.
Apr. 1-2, 1927	6.80	0	11.5	Mar. 31-Apr. 1	1.20	5	Mar. 19-20, 2.35 in.; Mar. 11-12, 0.50 in.
Apr. 18-20, 1927	6.25	0	10.0	Apr. 18	0.80	3	Apr. 15-16, 0.78 in.; Apr. 12-13, 0.90 in.; Apr. 8, 0.68 in.; Apr. 4, 0.47 in.
Sept. 9-14, 1926	6.70	0	9.9	Sept. 8-9	2.50	13	Sept. 3-4, 3.53 in.; Sept. 1-3, 1.15 in.; Aug. 29, 0.67 in.
Mar. 19-20, 1925	5.15	0	9.6	Mar. 18	1.35	12	Mar. 13, 2.70 in.
Watershed No. 5—Area, 11.5 sq. mi., Flood Stage, 7.6 ft.							
Oct. 1-10, 1926	10.25	90	36.0	Oct. 1-2	3.07	15	Sept. 27-29, 1.58 in.; Sept. 24-25, 1.54 in.
Sept. 9-14, 1926	9.95	48	32.8	Sept. 8-9	2.75	13	Sept. 3-4, 2.94 in.; Sept. 1-3, 0.17 in.
Apr. 7-8, 1926	5.80	0	12.9	Apr. 6-7	2.15	33	Apr. 2, 0.35 in.; Mar. 30-31, 0.62 in.
Oct. 1-2, 1927	7.00	0	9.8	Oct. 1	0.65	8	Sept. 30, 1.22 in.; Sept. 29, 1.42 in.; Sept. 28, 1.10 in.; Sept. 27, 0.45 in.
Apr. 1-2, 1927	6.80	0	9.3	Mar. 31-Apr. 1	1.51	5	Mar. 19-20, 1.62 in.; Mar. 11-12, 0.50 in.
Apr. 18-20, 1927	6.60	0	8.8	Apr. 18	0.40	6	Apr. 15-16, 0.93 in.; Apr. 12-13, 0.93 in.; Apr. 8, 0.94 in.; Apr. 4, 1.06 in.
Mar. 19-20, 1925	4.35	0	8.2	Mar. 18	1.50	16	Mar. 13, 2.65 in.
Dec. 18-21, 1924	3.40	0	5.4	Dec. 16-19	3.80	58	Dec. 7-8, 0.90 in.; Dec. 3-5, 0.60 in.
Aug. 20-21, 1924	2.20	0	2.7	Aug. 19-20	2.50	24	Aug. 9, 1.40 in.
July 14-15, 1927	2.00	0	1.0	July 13-14	2.55	35	July 9, 0.45 in.; July 6, 0.25 in.

Table 9

Flood Data Grouped by Storm Periods

Watershed No.	Watershed Area sq. mi.	Flood Stage ft.	Max. Stage ft.	Duration of Period above Flood Stage hrs.	Maximum Rate of Discharge: in. per hr.	Maximum Rate of Discharge: sec-ft.	Maximum Rate of Discharge: sec-ft. per sq. mi.	Rainfall Which Produced Flood Crest		
		Flood of August 20-21, 1924						Aug. 19-20	Aug. 9	
6	63.2	8.4	5.60	0	0.086	146	2.3	3.50 in. 24 hrs.	1.10 in.	
1	60.5	8.2	4.50	0	0.301	489	8.1	3.35 18	2.30	
7	27.2	4.0	4.90	32	0.216	158	5.8	4.00 18	1.55	
4	15.3	7.4	8.35	14	0.628	258	16.9	5.60 18	1.98	
3	12.0	7.5	8.50	17	0.735	238	18.2	4.90 18	1.80	
5	11.5	7.6	2.20	0	0.100	31	2.7	2.50 24	1.40	
		Flood of December 18-21, 1924						Dec. 16-19	Dec. 7-8	Dec. 3-5
6	63.2	8.4	10.80	69	0.327	556	8.8	3.85 in. 57 hrs.	1.14 in.	0.60 in.
1	60.5	8.2	6.35	0	0.532	866	14.3	4.40 46	0.67	1.05
7	27.2	4.0	6.10	48	0.585	427	15.7	3.90 46	1.04	0.90
4	15.3	7.4	7.40	0	0.564	232	15.2	4.60 46	0.76	1.18
3	12.0	7.5	6.90	0	0.562	182	15.2	4.05 46	1.02	1.24
5	11.5	7.6	3.40	0	0.200	62	5.4	3.80 58	0.90	0.60
		Flood of March 19-20, 1925						March 18	March 13	
6	63.2	8.4	9.55	36	0.272	462	7.3	1.40 in. 16 hrs.	2.30 in.	
1	60.5	8.2	4.20	0	0.288	468	7.7	1.20 12	2.25	
7	27.2	4.0	5.00	22	0.226	165	6.1	1.48 11	2.60	
4	15.3	7.4	5.10	0	0.197	81	5.3	1.23 12	2.25	
3	12.0	7.5	5.15	0	0.355	115	9.6	1.35 12	2.70	
5	11.5	7.6	4.35	0	0.303	94	8.2	1.50 16	2.65	
		Flood of April 7-8, 1926						Apr. 6-7	Apr. 2	Mar. 30-31
6	63.2	8.4	8.60	7	0.372	632	10.0	1.45 in. 33 hrs.	0.25 in.	0.70 in.
1	60.5	8.2	8.90	20	0.910	1481	24.5	2.60 33	0.54	0.96
7	27.2	4.0	6.00	44	0.541	395	14.5	2.21 33	0.58	0.79
4	15.3	7.4	8.60	12	0.807	332	21.7	2.65 33	0.58	0.87
3	12.0	7.5	6.80	0	0.507	164	13.7	1.90 33	0.52	0.83
5	11.5	7.6	5 80	0	0.478	148	12.9	2.15 33	0.35	0.62

TABLE 9—*Continued*
FLOOD DATA GROUPED BY STORM PERIODS

Watershed		Flood Stage	Max. Stage	Duration of Period above Flood Stage	Maximum Rate of Discharge			Rainfall Which Produced Flood Crest				
No.	Area sq. mi.	ft.	ft.	hrs.	in. per hr.	sec-ft.	sec-ft. per sq. mi.					
		Flood of September 9-14, 1926						Sept. 8-9		Sept. 3-4	Sept. 1-3	Aug. 29
6	63.2	8.4	11.45	125	0.288	490	7.8	1.40 in.	15 hrs.	1.60 in.	0.54 in.	0.14 in.
1	60.5	8.2	4.55	0	0.306	497	8.2	1.77	17	3.65	0.84	0.28
7	27.2	4.0	7.50	121	1.308	955	35.1	2.52	15	2.90	0.82	1.38
4	15.3	7.4	6.25	0	0.183	76	5.0	2.70	13	3.68	0.63	0.38
3	12.0	7.5	6.70	0	0.368	119	9.9	2.50	13	3.53	1.15	0.67
5	11.5	7.6	9.95	48	1.153	357	32.8	2.75	13	2.94	0.17	0.00
		Flood of October 1-10, 1926						Oct. 1-2		Sept. 27-29	Sept. 24-25	
6	63.2	8.4	12.80	205	0.424	722	11.4	2.95 in.	33 hrs.	1.33 in.	0.40 in.	
1	60.5	8.2	6.85	0	0.600	976	16.1	2.30	19	1.35	1.33	
7	27.2	4.0	8.05	156	1.600	1168	42.9	2.75	20	1.30	1.05	
4	15.3	7.4	8.50	64	0.425	175	11.4	2.62	16	1.60	1.24	
3	12.0	7.5	8.30	34	0.525	170	14.2	2.90	50	1.32	1.06	
5	11.5	7.6	10.25	90	1.337	414	36.0	3.07	15	1.58	1.54	
		Flood of April 1-2, 1927						Mar. 31-Apr. 1		Mar. 19-20	Mar. 11-12	
6	63.2	8.4	9.90	24	0.287	488	7.7	0.92 in.	5 hrs.	1.59 in.	0.70 in.	
1	60.5	8.2	3.45	0	0.218	354	5.8	1.45	5	2.38	0.57	
7	27.2	4.0	6.30	40	0.678	495	18.2	1.70	5	2.68	0.67	
4	15.3	7.4	7.45	1	0.574	243	15.9	1.45	5	2.70	0.55	
3	12.0	7.5	6.80	0	0.426	138	11.5	1.20	5	2.35	0.50	
5	11.5	7.6	6.80	0	0.346	107	9.3	1.51	5	1.62	0.50	

TABLE 9—*Concluded*
FLOOD DATA GROUPED BY STORM PERIODS

Watershed		Flood Stage	Max. Stage	Duration of Period above Flood Stage	Maximum Rate of Discharge			Rainfall Which Produced Flood Crest				
No.	Area sq. mi.	ft.	ft.	hrs.	in. per hr.	sec-ft.	sec-ft. per sq. mi.					
		Flood of April 18-20, 1927						Apr. 18	Apr. 15-16	Apr. 12-13	Apr. 8	Apr. 4
6	63.2	8.4	9.50	65	0.270	459	7.3	0.55 in. 6 hrs.	0.85 in.	2.05 in.	0.86 in.	1.06 in.
1	60.5	8.2	4.80	0	0.349	568	9.4	0.43 2	0.90	0.94	0.60	0.33
7	27.2	4.0	5.40	108	0.330	241	8.9	0.50 1	0.92	0.82	0.52	0.93
4	15.3	7.4	6.95	0	0.480	190	12.4	0.60 5	1.00	1.13	0.83	0.27
3	12.0	7.5	6.25	0	0.371	120	10.0	0.80 3	0.78	0.90	0.68	0.47
5	11.5	7.6	6.60	0	0.326	101	8.8	0.40 6	0.93	0.93	0.94	1.06
		Flood of July 14-15, 1927						July 13-14	July 9	July 6		
6	63.2	8.4	7.20	0	0.129	221	3.5	3.85 in. 34 hrs.	0.45 in.	0.35 in.		
1	60.5	8.2	5.45	0	0.406	661	10.9	2.30 6	0.75	0.25		
7	27.2	4.0	7.00	60	1.043	761	28.0	4.45 32	0.10	0.43		
4	15.3	7.4	5.20	0	0.141	58	3.8	2.85 35	0.20	0.48		
3	12.0	7.5	7.75	6	0.525	170	14.2	4.05 7	0.25	0.25		
5	11.5	7.6	2.00	0	0.039	12	1.0	2.55 35	0.45	0.25		
		Flood of October 1-2, 1927						Oct. 1	Sept. 30	Sept. 29	Sept. 28	Sept. 27
6	63.2	8.4	10.50	90	0.247	421	6.7	1.08 in. 8 hrs.	1.02 in.	1.12 in.	1.00 in.	0.42 in.
1	60.5	8.2	5.55	0	0.418	680	11.2	1.65 8	0 60	1.50	1.25	0.80
7	27.2	4.0	No Record									
4	15.3	7.4	7.80	14	0.542	223	14.6	1.85 8	0.40	1.95	1.18	0.22
3	12.0	7.5	8.50	20	0.612	198	16.5	1.60 8	0.63	2.50	1.30	0.33
5	11.5	7.6	7.00	0	0.365	113	9.8	0.65 8	1.22	1.42	1.10	0.45

station was 0.032. At flood stage this channel will carry a discharge of about 21.3 sec-ft. per sq. mi. Since the conditions which caused the April, 1926, flood were rather unusual, and since the flooding on this occasion was not serious, it is believed that the capacity provided by this channel is sufficient for this watershed.

The rainfall data in Table 8 do not explain the high flood discharge for the April, 1926, flood. The explanation lies in the fact that during January, February, and March the monthly precipitations were 1.75, 2.80, and 2.89 in., respectively, a large part of which was in the form of snow. At midnight on April 6, the temperature had risen to 50 deg. F. and the warm rain falling during the night melted the accumulated snow and caused the flood on April 7.

Temperature also played an important part in the storm of Dec. 18-21, 1924. The temperature on December 16, 17, 18, and 19, during which time 4.40 in. of rain fell, was only a few degrees above freezing. On the morning of the 19th, the temperature fell rapidly and on the 20th a temperature of zero degrees was reached. Had not this cold wave occurred, the flood run-off would have been much greater.

Another factor which affects flood discharge from a given watershed is the moisture content of the soil. This factor predominated in the summer floods of August, 1924, and July, 1927. In both instances the ground was dry, as is normally the case in the summer, and the rainfall of 3.35 in. in 18 hours on August 19-20 produced a flood discharge of only 8.1 sec-ft.; and 2.30 in. in 6 hours on July 13-14, 1927, caused a peak discharge of 10.9 sec-ft. The effect of intensity of precipitation is also illustrated in these two storms, as the smaller, more intense rainfall caused the greater rate of discharge.

The storm of October 1-10, 1926, produced the second highest flood discharge from this watershed, although it ranked first in magnitude over three of the other watersheds. The rainfall of October 1-2 was not the primary cause of this flood, for had it not been for the 10.96 in. of rain during September, only a moderately high stage would have been reached. As proof of this statement, consider the flood of October 1-2, 1927. The flood discharge was only 11.2 sec-ft. and was caused by 5.80 in. of rain in the five days preceding.

From the foregoing discussion it is clear that large rainfall of itself does not necessarily cause high floods, and that temperature, moisture content of the soil, and the intensity of precipitation are factors of prime importance.

38. *Watershed No. 3.*—Because of the fact that this channel had not been cleared for some years, the higher discharges produced much

higher stages than they would have if the channel had received proper attention as to maintenance. The lowest value of n obtained for this channel was 0.077 in April, 1926, at a stage of 8.30 ft., and the highest value of n measured was 0.112 in October, 1926. If this channel were cleared annually, it should carry a discharge of about 23.0 sec-ft. at flood stage, and since this is greater than any discharge which occurred from this watershed during the investigation, and, furthermore, since several rather unusual storms occurred during this period, it is believed that this channel would be adequate for the watershed, if it received proper attention.

The effect of total precipitation is more apparent on this watershed than it was on watershed No. 1. The greatest flood flow was caused by the greatest precipitation, 4.90 in. on August 19-20, 1924. Although the length of this storm was 18 hours, undoubtedly the major portion fell in a much shorter period of time. This is the only watershed on which a summer storm caused the highest rate of discharge. This can be accounted for not only by the magnitude and intensity of the rainfall, but also by the steeper slopes on this watershed.

The October, 1927, flood ranks second highest, due not to the 1.60 in. on October 1, but to the 6.36 in. from September 27 to October 1.

It will be observed that most of the storms caused flood discharges of about the same magnitude, and that the highest rate is not quite twice the lowest. A study of Table 5 shows that the run-off from this watershed was more nearly uniform throughout the period of investigation than that from any of the others.

39. *Watershed No. 4.*—The data for this watershed present an excellent opportunity for comparing the effect of spring and summer floods, since the greatest flood occurred in April and the next highest in August. Both of these storms have been commented on. The interesting feature is that a rainfall of 5.60 in. in 18 hours in August did not produce as high a flood run-off as one of 2.65 in. in April, combined with the run-off from melting snow.

It will be noted that the storms of September and October, 1926, which caused the largest floods on some of the watersheds, did not cause high discharges on this one, although the rainfalls were about the same. No explanation is given for this inconsistency.

40. *Watershed No. 5.*—The carrying capacity of this channel was exceeded only twice during the period of investigation and this was during the unusual storms of September and October, 1926, when the channel was in very poor condition, due to the growth both on the

side slopes and in the channel itself. A measurement in September gave a value of n of 0.099, and a later measurement in October, after the cattails growing in the channel had been washed away, gave a value of n of 0.060.

The maximum rate of discharge of 36.0 sec-ft. per sq. mi., which occurred during the October, 1926, flood, was the second highest rate observed for any of the watersheds during the entire period of the investigation. The rainfall during September and October was very unusual, and frequency studies made by the writer indicate that rainfalls of this magnitude should not occur with a greater average frequency than once in 50 to 75 years. Why these storms should have caused such high rates of discharge, however, is not clear from the data given. Possibly the actual rainfall over this watershed was greater than that measured at the rainfall stations.

The two summer storms gave the lowest rate of discharge from this watershed, because the rainfall was much less than that over some of the other watersheds, and insufficient to counteract the low moisture content of the soil.

The spring flood of April, 1926, gave the third highest rate of discharge. Although the rainfall was somewhat less than it was over the other watersheds, and there was not so much snow on the ground at the time, it should have caused a higher rate. The great difference in the rates of run-off for this and the two storms in the fall of 1926 can not be explained by the data.

41. *Watershed No. 6.*—This watershed ranks second as regards size and is next to the flattest with respect to topography. The fact that the stream overflowed its banks during eight of the ten flood periods is a clear indication that the capacity of the channel is inadequate. This is due primarily to the luxuriant growth of willows on the side slopes. These willows grow so fast that even annual clearing would not suffice to keep the channel in good condition. This channel was cleared in the fall of 1925 and in April, 1926, a value of n of 0.032 was measured. By September of the same year, however, the growth of willows had increased n to 0.090, showing that annual clearing will not solve the problem.

The storms of April and October, 1926, which have been described under the discussion of the other watersheds, caused the greatest floods on this watershed. The rates of discharge are not high, however, due to size or topography, or both. The ditch draining this watershed is deep and provides a good slope for the ground water. The result is that the watershed has greater soil-storage capacity than the other

watersheds. This is indicated further by the greater dry weather flow.

The September, 1926, flood ranks fourth for this watershed, and is little higher than those just below it in rate of discharge. This is evidently the result of the topography and the soil storage.

The two summer storms, although yielding 3.50 and 3.85 in. of rain, produced the lowest rates of discharge. Evidently rainfalls of these amounts during the summer months will not produce a flood on such a flat watershed.

42. *Watershed No. 7.*—This watershed is at the headwaters of the Embarrass River and the area has not been artificially drained; hence the channel is a natural one. The banks are quite low, and at the gaging station they were only 4.0 ft. high; hence this stream overflowed its banks during all of the ten storm periods.

This watershed gave the highest rates of discharge of any of the watersheds studied. It has the steepest slopes of any, and undoubtedly topography is the controlling factor in the flood discharge.

The storms of September and October, 1926, would naturally be expected to produce the highest rates of discharge. Also the summer storms would be expected to rank high on account of the topography, and it is logical that the July, 1927, flood discharge should rank third; but it is not clear from the tabulated data why the August, 1924, storm should have produced such a low rate of discharge. The explanation probably is that in July, 1927, 2.70 in. fell in 5 hours, whereas in August, 1924, the 4.00 in. fell rather uniformly through a period of 18 hours. This is probably the best illustration provided by the data as to the effect of intensity of rainfall upon the rate of discharge.

XIII. Effect of Watershed Characteristics upon Flood Discharge

The data in Table 9 are grouped by flood periods, so that the effect of watershed characteristics upon the rate of flood discharge might be studied to better advantage. For the same rainfall, at the same time and with the same temperature and soil-moisture-content conditions, any difference in discharges must be due to differences in watershed characteristics. The watersheds studied vary considerably in size and topography, but the other characteristics are quite similar. Hence the differences in discharge shown in the table are due to differences in these two characteristics.

43. *Effect of Topography of Watershed.*—Watershed No. 1 contains 60.5 sq. mi. and watershed No. 6, 63.2 sq. mi. a difference of

about 4 per cent. Also, watershed No. 3 drains 12.0 sq. mi. and watershed No. 5, 11.5 sq. mi., again a difference of about 4 per cent. Since watersheds Nos. 1 and 6 are practically the same size, as are also watersheds Nos. 3 and 5, any differences in rate of discharge from them must be due to topography, shape, and arrangement of natural or artificial drainage system, provided the rainfall over both is the same in total amount, distribution, and intensity. During six of the storm periods the rainfalls over watersheds Nos. 1 and 6 were within 26 per cent of each other as to total amount. As shown in Table 10, No. 1 gave the higher rate of run-off for each of the storms. The ratios agree reasonably well with the exception of the first one, and if this be omitted, the average of the remaining five is 1.3. This would indicate that the difference between the topography and arrangement of drainage system of these watersheds normally causes a difference of about 30 per cent in the rate of flood discharge. Also, it would appear that for summer rains of the thunder-storm type, where the intensity may be quite high, the effect of topography is more marked.

A similar comparison of watersheds Nos. 3 and 5 is shown in Table 11. The ratios in this case are so irregular that no conclusion can be drawn. The slopes of No. 3 are much steeper than those of No. 5, and the rate of discharge should always be greater, but this is not the case. Although the total rainfall over the two watersheds is more nearly uniform than in the case of the other two watersheds studied, there must have been considerable differences in intensity to account for the storms of September and October, 1926. There is nothing in the rainfall data, however, to warrant this explanation.

Another comparison which can be made is that of watersheds Nos. 3 and 4. The former is about 22 per cent smaller and has steeper slopes than the latter; hence the run-off from it should be somewhat larger. The data in Table 12 show that during five of the seven storms compared this is the case, but the differences are very irregular.

44. *Effect of Size of Watershed.*—Since size of watershed is generally considered to be the principal factor governing the rate of run-off per unit area, it would be expected that the effect of size would be quite apparent in the data in Table 9, especially in the case of watersheds Nos. 5 and 6 which are contiguous and which have the same watershed characteristics, except that of size. This is not the case, however, as can be seen from the comparison given in Table 13 of the four storms in which the precipitation over the two watersheds was much the same.

A similar comparison of other watersheds does not lead to satis-

TABLE 10

COMPARISON OF RATES OF DISCHARGE FROM WATERSHEDS NOS. 1 AND 6

Date of Storm	Watershed No. 1 sec-ft.	Watershed No. 6 sec-ft.	Ratio 1 to 6	Remarks
Aug. 20-21, 1924	8.1	2.3	3.5	Rainfall over No. 1 4 per cent smaller
Dec. 18-21, 1924	14.3	8.8	1.6	Rainfall over No. 1 14 per cent larger
Mar. 19-20, 1925	7.7	7.3	1.1	Rainfall over No. 1 4 per cent smaller
Sept. 9-14, 1926	8.2	7.8	1.1	Rainfall over No. 1 26 per cent larger
Oct. 1-10, 1926	16.1	11.4	1.4	Rainfall over No. 1 22 per cent smaller
Apr. 18-20, 1927	9.4	7.3	1.3	Rainfall over No. 1 22 per cent smaller

TABLE 11

COMPARISON OF RATES OF DISCHARGE FROM WATERSHEDS NOS. 3 AND 5

Date of Storm	Watershed No. 3 sec-ft.	Watershed No. 5 sec-ft.	Ratio 3 to 5	Remarks
Dec. 18-21, 1924	15.2	5.4	2.8	Rainfall over No. 3 7 per cent larger
Mar. 19-20, 1925	9.6	8.2	1.2	Rainfall over No. 3 10 per cent smaller
Apr. 7-8, 1926	13.7	12.9	1.1	Rainfall over No. 3 12 per cent smaller
Sept. 9-14, 1926	9.9	32.8	0.3	Rainfall over No. 3 9 per cent smaller
Oct. 1-10, 1926	14.2	36.0	0.4	Rainfall over No. 3 6 per cent smaller
Apr. 1-2, 1927	11.5	9.3	1.1	Rainfall over No. 3 20 per cent smaller

TABLE 12

COMPARISON OF RATES OF DISCHARGE FROM WATERSHEDS NOS. 3 AND 4

Date of Storm	Watershed No. 3 sec-ft.	Watershed No. 4 sec-ft.	Ratio 3 to 4	Remarks
Aug. 20-21, 1924	18.2	16.2	1.1	No. 3 had 12 per cent less rainfall
Dec. 18-21, 1924	15.2	15.2	1.0	No. 3 had 12 per cent less rainfall
Mar. 19-20, 1925	9.6	5.3	1.8	No. 3 had 10 per cent more rainfall
Sept. 9-14, 1926	9.9	5.0	2.0	No. 3 had 10 per cent more rainfall
Oct. 1-10, 1926	14.2	11.4	1.2	No. 3 had 11 per cent more rainfall
Apr. 1-2, 1927	11.5	15.9	0.7	No. 3 had 18 per cent less rainfall
Apr. 18-20, 1927	10.0	12.4	0.8	No. 3 had 33 per cent more rainfall

TABLE 13

COMPARISON OF RATES OF DISCHARGE FROM WATERSHEDS NOS. 5 AND 6

Date of Storm	Watershed No. 5 (11.5 sq. mi.) sec-ft.	Watershed No. 6 (63.2 sq. mi.) sec-ft.	Ratio 5 to 6	Remarks
Dec. 18-21, 1924	5.4	8.8	0.6	No. 5 had 1 per cent less rainfall
Mar. 19-20, 1925	8.2	7.3	1.1	No. 5 had 7 per cent more rainfall
Oct. 1-10, 1926	36.0	11.4	3.2	No. 5 had 4 per cent more rainfall
Apr. 18-20, 1927	8.8	7.3	1.2	No. 5 had 28 per cent less rainfall

factory results. In fact size of watershed does not seem to be as important a factor as topography. On the whole, the results of this phase of the investigation are rather disappointing. It is believed that the results would have been more consistent, if the rainfall stations had been closer. This is especially true for the summer storms and for those of September and October, 1926. During the last-mentioned storms, the total rainfall over central Illinois was very high, but at the same time it was not at all uniform, and it is highly probable that the precipitation over the southern watersheds, Nos. 5, 6, and 7, was greater than that observed at the rainfall stations.

45. *Conclusions.*—Most formulas which have been proposed for the estimation of the rate of flood discharge are of the form, $q = \frac{C}{M^x}$, in which q is the discharge in cubic feet per second per square mile of drainage area, C a coefficient representing the effect of all the various watershed characteristics with the exception of size, M the area of the watershed, and x an exponent whose value is generally taken as between 0.2 and 0.3. The fact that the size of watershed is given such prominence in these formulas has led many to believe that size is the principal and controlling characteristic. This is not necessarily true for small watersheds. Topography, geology, temperature, and moisture content of soil are in many instances the controlling factors in determining the rate of flood discharge.

Size of watershed has been given prominence in flood formulas, because it is the only watershed characteristic for which there is a definite unit of measurement. Watershed areas can be measured and definitely expressed in terms which all can understand; but there is no such yardstick to measure topography, geology, vegetation, and other characteristics. The effect of all these characteristics is expressed in the coefficient C. For the engineer, who has no background of flood-flow experience to draw upon, it is a rather dangerous proceeding to choose a value of C for a particular watershed. It should be clearly understood, therefore, that all flood-flow formulas are to be used with considerable caution.

The data upon rates of flood discharge obtained during this investigation do not warrant the derivation of a flood-flow formula, nor can any definite conclusions be drawn as to the effect of watershed characteristics. The following general statements are presented, however, as the result of this study:

(1) Size of watershed does not seem to be as important for small

watersheds as it has generally been considered. Certainly, size is not the controlling characteristic.

(2) Topography has a marked effect upon rates of flood run-off, even from watersheds which are so flat as to require artificial drainage for successful agriculture.

(3) Completeness of drainage is an important characteristic. The more adequate the drainage facilities, the greater the rate of flood discharge during excessive storm periods, especially those occurring during the winter and spring.

(4) Drainage ditches in Central Illinois should be designed to carry maximum discharges of from 15 to 30 sec-ft. per sq. mi. of watershed area, depending upon the topography, completeness of drainage, and the degree of protection desired. It is believed that the higher value will not be exceeded on the average more often than once in 25 years.

XIV.—Annual Run-Off or Yield of Watershed

46. *Data.*—Monthly and annual rainfall and run-off data for three years are shown in Table 14. It will be observed that the calendar year is not used, but instead a 12-month "water year," beginning September 1, since in the fall both ground and surface storage are reduced to a minimum. October 1 would normally be a better time to start the water year in this latitude, and that was the reason for discontinuing the rainfall and run-off measurements on October 1, 1927; but, because of the exceptionally heavy precipitation during September, 1926 and the storm of September 27-October 1, 1927, it was thought best to start the year on September 1. The rain on August 31, 1924, is included in the September precipitation, as its effect upon the run-off would occur in the latter month.

47. *Rainfall—Run-Off Relation.*—Under normal climatic conditions, a three-year record of run-off would be of little value in predicting run-off conditions over a longer period of time. Fortunately, the three years of this investigation were rather unusual ones, one being an average year, one a rather dry year, and the third a very wet one; hence the annual data in Table 14 cover a much wider range of rainfall and run-off conditions than would be covered by data for a much longer period of more normal years. The annual values of rainfall and run-off in Table 14 are plotted in Fig. 37.

Table 14
Monthly Rainfall and Run-Off

Watershed No.		Rainfall and Run-off in Inches													
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Year	Per Cent Run-off
		1924-1925													
1	Rainfall	2.98	1.24	1.07	6.38	0.63	1.09	3.76	1.65	0.34	2.60	0.78	3.94	26.46	
	Run-off	0.52	0.10	0.15	2.12	0.63	1.96	2.65	0.78	0.24	0.22	0.04	0.02	9.43	35.6
3	Rainfall	2.29	1.63	1.13	6.56	0.61	1.34	4.35	2.00	0.24	3.56	1.25	4.83	29.79	
	Run-off	0.71	0.57	0.55	2.34	0.97	1.53	2.75	1.10	0.60	0.18	0.00	0.01	11.31	38.0
4	Rainfall	3.51	1.34	0.82	6.73	0.88	1.23	3.90	1.71	0.31	3.13	1.81	4.26	29.63	
	Run-off	0.04	0.00	0.00	1.49	0.06	0.66	1.58	0.40	0.31	0.08	0.00	0.00	4.62	15.6
5	Rainfall	2.30	1.85	0.80	5.41	0.85	1.35	4.36	1.36	0.28	1.97	1.75	2.69	24.97	
	Run-off	0.28	0.32	0.12	1.35	0.42	1.18	2.17	0.62	0.29	0.00	0.00	0.00	6.75	27.0
6	Rainfall	2.22	1.59	0.76	5.73	0.92	1.53	4.07	1.87	0.41	1.99	1.92	3.11	26.12	
	Run-off	0.21	0.09	0.06	2.23	0.52	1.65	2.67	0.58	0.18	0.04	0.00	0.00	8.23	31.5
7	Rainfall	2.91	1.39	0.83	6.15	0.75	1.40	4.45	1.88	0.23	2.30	1.22	3.39	26.90	
	Run-off	0.22	0.02	0.00	1.62	0.75	1.26	1.92	0.00	0.00	0.00	0.00	0.00	5.79	21.5
		1925-1926													
1	Rainfall	6.80	3.24	2.77	1.13	1.75	2.80	2.89	4.37	2.14	3.18	4.59	4.04	39.70	
	Run-off	0.74	0.42	1.45	1.08	1.06	1.88	1.45	3.46	0.59	0.42	0.36	0.55	13.46	33.9
3	Rainfall	5.74	3.14	2.80	1.27	1.81	3.24	2.08	3.79	1.99	3.73	2.60	3.15	35.34	
	Run-off	0.67	0.68	1.31	1.06	0.92	1.56	0.84	2.24	0.67	0.69	0.08	0.05	10.77	30.5
4	Rainfall	6.71	3.15	2.52	1.24	1.80	3.10	2.19	4.52	2.30	3.82	3.30	1.90	36.55	
	Run-off	0.01	0.28	0.84	0.65	0.61	1.34	0.88	2.54	0.75	1.29	0.03	0.00	9.22	25.2

TABLE 14—*Concluded*
MONTHLY RAINFALL AND RUN-OFF

Watershed No.		Rainfall and Run-off in Inches													
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Year	Per Cent Run-off
		1925-1926 (*Concluded*)													
5	Rainfall	4.80	1.47	2.40	0.40	1.22	2.30	1.66	3.51	2.44	3.55	0.23	4.30	28.28	
	Run-off	0.20	0.53	0.85	0.79	1.03	1.25	1.03	2.12	0.80	0.96	0.17	0.53	10.26	36.3
6	Rainfall	5.70	2.71	2.51	1.30	1.56	2.60	2.44	3.31	1.73	3.33	1.43	3.18	31.80	
	Run-off	0.01	0.15	0.68	0.79	0.82	1.40	1.22	2.56	0.57	0.48	0.08	0.09	8.85	27.8
7	Rainfall	5.70	3.99	2.85	1.21	1.87	2.92	2.66	4.09	2.39	3.58	4.31	4.09	39.66	
	Run-off	0.14	0.22	0.77	0.65	0.96	1.79	1.30	2.50	0.69	1.35	0.20	0.77	11.34	28.6
		1926-1927													
1	Rainfall	10.96	4.74	2.90	1.13	1.85	1.42	4.94	4.59	5.59	5.42	6.87	3.13	53.54	
	Run-off	3.44	3.94	1.95	1.12	1.13	2.15	2.36	4.16	2.30	2.19	2.01	1.21	27.96	52.2
3	Rainfall	10.70	4.40	2.61	1.05	1.54	1.25	4.64	5.11	5.04	4.99	7.12	2.93	51.38	
	Run-off	2.56	3.44	1.82	1.20	1.14	2.03	1.92	3.71	2.30	2.00	2.59	1.38	26.09	50.8
4	Rainfall	11.69	5.31	2.45	1.35	1.78	1.84	5.40	5.93	5.52	5.44	5.80	3.07	55.58	
	Run-off	1.70	2.47	1.70	0.92	0.89	2.33	2.11	4.55	2.36	2.87	0.90	0.79	23.59	42.4
5	Rainfall	10.30	5.06	2.44	1.69	1.99	1.28	4.51	6.36	6.76	5.48	4.80	3.68	54.35	
	Run-off	4.79	4.90	0.96	0.66	0.86	1.37	1.62	3.21	1.52	1.33	0.42	0.21	21.85	40.2
6	Rainfall	6.07	5.03	3.00	2.05	2.17	1.54	4.00	6.96	5.08	5.12	5.91	2.23	49.16	
	Run-off	3.90	5 03	1.37	0.83	0.83	2.15	1.99	4.92	1.85	1.93	0.93	0.20	25.93	52.7
7	Rainfall	9.64	4.44	2.57	0.97	1.76	1.21	5.54	4.77	5.16	5.95	6.16	4.61	52.78	
	Run-off	6.13	4.87	1.48	1.70	2.03	3.04	1.58	4.03	2.75	3.48	2.40	1.16	34.65	65.6

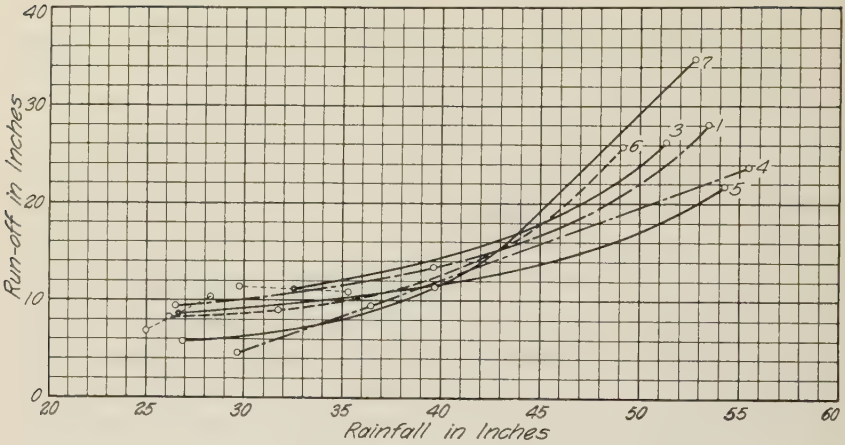


Fig. 37. Curves Showing Average Rainfall—Run-Off Relation

48. *Effect of Watershed Characteristics.*—Although watershed No. 4 received more rainfall than the other watersheds, the run-off from it at all times was much lower than that of the others. This is due to the fact that the channel draining this watershed was dredged for a distance of only about one mile below the gaging station and that the outlet was entirely inadequate. The result was that even during periods of no flow, the depth of the water in the channel at the gaging station was from 2.4 to 3.0 ft., depending upon the season, and hence the ground water level was high, with resulting large losses from evaporation and transpiration. This explains why the run-off from watershed No. 4 was less than that from the other watersheds.

Watershed No. 7 is the only one of those studied which is not provided with artificial drainage. To offset this lack, however, the slopes of this watershed are steeper than those of the others. The effect of these conditions is evident in Fig. 37. For the dry year, the run-off from this watershed was less than from the others, with the exception of watershed No. 4; whereas in the wet year, the steeper slopes more than offset the lack of artificial drainage, and the run-off was much greater than that from the other watersheds.

Figure 37 shows very clearly that watershed characteristics have a very decided effect upon the rainfall—run-off relation; and that in estimating the annual yield of a given watershed for an assumed annual rainfall, the characteristics of the watershed must be taken into consideration, even from watersheds which are so flat as to require artificial drainage for successful agriculture.

TABLE 15
ANNUAL RAINFALL FREQUENCY AT URBANA, ILLINOIS

Average Frequency	Rainfall	
	Minimum	Maximum
Once in 1 year	33.7	33.7
Once in 5 years	29.0	40.2
Once in 10 years	27.2	44.4
Once in 20 years	26.2	48.2
Once in 50 years	24.7	53.2
Once in 100 years	24.0	57.0

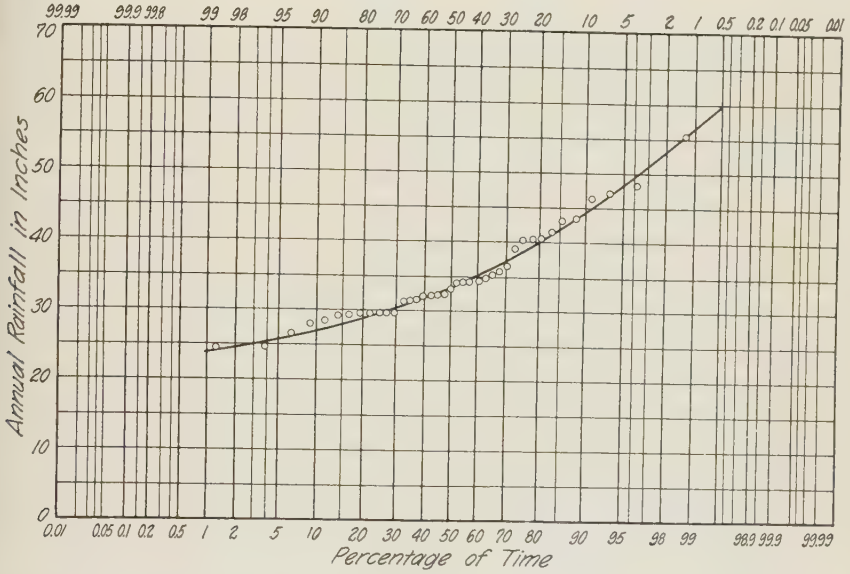


FIG. 38. DURATION CURVE OF ANNUAL RAINFALL AT URBANA, ILLINOIS

It is to be remembered that the lower ends of the curves represent rainfall and run-off data for the *same* year. During other dry years, having the same annual rainfall, the seasonal distribution might vary considerably, and with a variation in distribution the resulting run-off would probably be different. Hence, all that can be claimed for the curves in Fig. 37 is that they show the rainfall—run-off relation for the six watersheds during the period from September 1, 1924, to August 31, 1927.

49. *Frequency.*—The engineer is interested not only in the amount of watershed yield, but also in the frequency of occurrence of yields of

a given magnitude, especially low yields. The period of the investigation was entirely too short to provide direct information on this point. There is information, however, on the frequency of rainfalls of given magnitude, and this may prove of some value in estimating yields of watersheds. The annual rainfalls at Urbana from 1889 to 1927, inclusive, were plotted in order of magnitude on probability paper, and a duration curve drawn through the points, as shown in Fig. 38. The frequency data in Table 15 are scaled from this curve.

XV.—Summary

50. *Conclusions as to Value of Kutter's n.*—

(1) The minimum value of n which should be used in the design of drainage ditches in Central Illinois is 0.040. This value obtains at high stages during the summer months in the best-maintained channels, where the bottom of the channel is clear of vegetation and the side slopes are covered with grass or low weeds, but no bushes. This low value of n should not be used unless the channel is to be cleared annually of all weeds and bushes.

(2) A value of n of 0.050 should be used, if the channel is to be cleared in alternate years only. Large weeds and bushy willows, three to four feet high, on the side slopes will produce this value of n.

(3) In channels which are not cleared for a number of years, the growth may become so abundant that values of n above 0.100 may exist.

(4) Trees 6 to 8 inches in diameter growing on the side slopes do not impede the flow so much as do small bushy growths, provided the lower, overhanging limbs are cut off.

51. *Conclusions as to Rates of Flood Discharge.*—

(1) The size of watershed does not seem to be as important for small watersheds as it has generally been considered. Certainly, size is not the controlling characteristic.

(2) Topography has a marked effect upon rates of flood run-off, even from watersheds which are so flat as to require artificial drainage for successful agriculture.

(3) Completeness of drainage is an important characteristic. The more adequate the drainage facilities, the greater the rate of flood discharge during excessive storm periods, especially those occurring during the winter and spring.

(4) Drainage ditches in Central Illinois should be designed to carry maximum discharges of from 15 to 30 sec-ft. per sq. mi. of

watershed area, depending upon the topography, completeness of drainage, and the degree of protection desired. It is believed that the higher value will not be exceeded on the average more often than once in 25 years.

52. *Conclusions as to Annual Yields from Small Watersheds.*—The duration of the investigation was much too short to draw any but the most general conclusions from the data obtained upon watershed yields. However, the fact that one of the three-year periods was a rather dry one, one a very wet one, and the third an average year tends to offset somewhat the shortness of the record. It would appear that, from watersheds similar to those studied, the annual yield during the normal year should be from 9 to 11 inches; that, on an average of once in ten years, a yield as low as 7 inches may be expected; and that, on an average of once in 20 years, an annual yield as low as 6 inches may occur.

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